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ABSTRACT

The University of Tennessee residence halls have been considered a central component of the total university educational program. Although they play an important role in the socialization and development of students, the residence halls also have a considerable economic impact on the Knoxville community. Statistics from a study of the university's influence on the economic growth of Knoxville showed that in 1970 the university accounted for eight percent of the area's total personal income and over four percent of the area's employment. The residence halls and auxiliary enterprises accounted for 24% of the university's income in 1974. Approximately 95% of the Residence Halls Department budget was spent locally, while 93% of the revenue originated outside the Knoxville area. The impact of resident students' personal spending in the community was also found to be substantial. Although geographically specific, this study could be used as a model for conducting similiar research on the economic effect of college housing on a local community. (JAC)

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DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE DEPARTMENT OF RESIDENCE HALLS OF THE UNIVERSITY OF TENNESSEE AT KNOXVILLE (U.T.K.) ON U.T.K. AND THE KNOXVILLE AREA TENNESSEE, U.S.A. -- AN EXPLORATORY REPORT

By

Vernon Roddy
and
Kenneth L. Stoner

For the Department of Residence Halls
Of The University of Tennessee at Knoxville,
Knoxville, Tennessee
U.S.A.

CG 016029

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April 20, 1977
Knoxville, Tennessee

PREFACE

We have attempted to keep academic disciplinary jargon at a minimum in this report. This is, as the title says, an exploratory report. Time and monetary constraints, and skill, prevent further refinement of the methodology and estimates at present. The report is more suggestive than anything else --- suggestive of more work which can be performed in the future to enlighten the subject. The Preface is just what readers have been asking for --- short and to the point.

--- Vernon Roddy
April 1, 1977

ACKNOWLEDGEMENTS

We will here record the names of a few people whose immediate, direct and indirect assistance is reflected at various places in the report: Of the U.T.K. Department of Residence Halls, Kenneth L. Stoner, Associate Director, who conceived and planned the project; David Sharrar, Assistant Director, who provided much data and help; Mrs. Virginia Copenhaver; and Mrs. Muriel Hill. Of the U.T.K. Department of Economics, Professor Charles B. Garrison and Professor John R. Moore, two of the writer's teachers. Of the U.T.K. Center for Business and Economic Research, David Hake, Director; Kenneth E. Quindry, Research Professor; George Kronbach, Research Economist; and William F. Skidmore, Assistant Director. Of the T.U.T. Office of Institutional Research, Sally Williams, Data Analyst. Of the U.T.K. Physical Plant, Ben Roberts. Of the Knox County, Tennessee, Property Assessor's Office, Betty Cable. Of the U.T.K. Food Services Department, Dan Wilson, Accounting Manager. Of the T.U.T. Accounting Office, Ray Burns. And Robert Fling, T.U.T. Vice President for Business and Finance. There were others, yes.

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INTRODUCTION: A CAUTION

While this report has been termed an economic impact report, it should be noted that efforts aimed at satisfactorily isolating what is "purely economic" from the larger whole of any matter have apparently not been among our more exciting (some observers would substitute "notable") achievements here on earth. In fact, explicit efforts at partial analysis are usually just that: partial: only part of the story. (Some observers might argue the same concerning most efforts at "general" analysis.) Veterans and decision makers do not care for only part of a story. But that is exactly our stated goal here, to look exploratively at one very integral aspect of the Department of Residence Halls of The University of Tennessee at Knoxville. Nevertheless, we will find that in attempting this circumscribed goal, some things not normally thought of as economic (especially by some established economists) must be discussed. We will find, moreover, that our report title is at once too narrow and too broad. For the "economic impact" of a particular activity could bring to mind any number of factors to those many persons who have spoken upon economic matters.

We will discover that our report surveys only a few very narrowly defined economic impacts, which may not even be the most significant ones from other perspectives.[1]

Economic impact reports are still in high fashion today, as they have been since before World War II. Their popularity has put bread on the table for thousands of planners, economists, statisticians, administrators, and others working for both government and non-government groups. The writer believes that this long-standing popularity stems in large measure from the seeming exactness of the typical impact report. Exactness, however, can be two-edged if we but let it. We must scrutinize these reports more carefully and consistently. We must demand that definitions be clear, that the double counting be minimized, that the esti-

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[1] For a representative sampling of the numerous economic contexts of post-highschool educational institutions, see the standard reference by John Caffrey and Herbert H. Isaacs, Estimating the Impact of a College or University on the Local Economy (Washington, D.C.: American Council on Education, 1971), xii, 73 pp.

An excellent example of studies which have attempted to quantify many variables concerning an individual institution is William A. Strang's The University and the Local Economy: A Study of the Economic Interaction Between the University of Wisconsin and the Dane County Economy (Madison, Wis.: The University of Wisconsin Bureau of Business Research and Service, September, 1971), 132 pp.

A recent study which makes the economic impact only one among a slew for an individual institution is Better University-Community Relations, A Beginning . . . An Impact Study of the University of Colorado on the City of Boulder (Boulder, Colo.: University of Colorado Office of the Vice-President for University Relations, February, 1974), xiii, 147 pp.

A recent study which focuses on a state-wide system of public colleges, instead of the single campus, is Larry J. Dobesh and Mark S. Henry's Economic Impact of Higher Education in North Dakota (Grand Forks, N.D.: University of North Dakota Bureau of Business and Economic Research, June, 1975), iii, 93 pp.

mates and projections be capable of verification and refutation. We should be able to learn from our mistakes. Where economic impact reports are to be the principal field for decision making (we are not advocating this here), can we not proceed in a scientific manner?[2]

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[2]The economic impact, or rather, the economic base technique, will be discussed in more detail in later sections of this report. We note here that one of the best single compilations concerning the early historical development of the economic base concept is The Techniques of Urban Economic Analysis (West Trenton, N.J.: Chandler-Davis Publishing Co., 1960), 410 pp., edited by Ralph W. Pfouts. Also very insightful is the short discussion "Regional Multipliers: The Economic Base Type" found in Walter Isard, et al., Methods of Regional Analysis: An Introduction to Regional Science (Cambridge, Mass.: The Massachusetts Institute of Technology Press, 1960), pp. 189-205. Most recent impact studies also point prominently toward Charles M. Tiebout, The Community Economic Base Study (New York, N.Y.: Committee for Economic Development, December, 1962, Supplementary Paper No. 16).

THE UNIVERSITY OF TENNESSEE (T.U.T.)

The University of Tennessee is a government educational and research institution which traces its beginnings to Blount Seminary (Presbyterian), founded in 1793 in Knoxville, Southwest Territory, now Tennessee. The institution's name has been "The University of Tennessee" (T.U.T.) since March 10, 1879. In addition, the institution has been the State of Tennessee's "federal land-grant college" since 1869. All of T.U.T.'s units and activities are administered by and under the direction of its Board of Trustees, whose members are appointed by the Governor of the State of Tennessee. The Board of Trustees is directly responsible to the Tennessee State Legislature for the administration of the University (T.U.T.). It should be noted here that the Board of Trustees has received regular financial appropriations from the State Legislature only since 1903. Of the several present-day branches of the University system, "The University of Tennessee at Knoxville" (U.T.K.) is one.[1]

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[1] For more information on the history and organization of T.U.T. and U.T.K., one is referred especially to the following works: Progress and Problems: A Time for Building -- Central Report/Self-Study/1970 (Knoxville, Tenn.: The University of Tennessee, Knoxville, 1971), esp.

[footnote 1, continued]

pp. 5-26; William Oscar Oakes, "An Organizational Structure for The University of Tennessee Systems-Level Administration," Ed.D. dissertation (Educational Administration and Supervision), The University of Tennessee, Knoxville, Tennessee, December, 1970, esp. pp. 41-53, but elsewhere as well; Miss Catherine Heiskell and Miss E. Lucy Ogden, "A List of Acts, Resolutions and Codified Laws Relating to the University of Tennessee from Its Charter as Blount College To and Including 1927, Compiled by Miss Catherine Heiskell, with Revisions and Additions Through 1941 by Miss E. Lucy Ogden" (Knoxville, Tenn.: The University of Tennessee, 1943); Stanley J. Folmsbee, Robert E. Corlew, and Enoch L. Mitchell, Tennessee: A Short History (Knoxville, Tenn.: The University of Tennessee Press, 1969), esp. p. 124, chaps. 16, 23, 25; and, of course, the several sources listed in Sam B. Smith and Luke H. Banker, Tennessee History: A Bibliography (Knoxville, Tenn.: The University of Tennessee Press, 1974), pp. 278-281, particularly those works by Stanley J. Folmsbee and by James Riley Montgomery.

THE UNIVERSITY OF TENNESSEE AT KNOXVILLE (U.T.K.)
KNOXVILLE AREA

The Knoxville campus of the Knoxville branch of The University of Tennessee is the largest campus in the system, both in terms of physical size and student enrollment. Generally, it is considered the "main campus" of the University, and especially the main, but not only, center for graduate type instruction. The Knoxville campus has been "coeducational" since 1892 and has offered as general as the Ph.D. degree since World War II, in an increasing number of fields.[1]

The physiographic center of the Knoxville campus is located approximately one mile southwest of the traditional center of the city of Knoxville, Tennessee. U.T.K.'s Knoxville campus and Knoxville have travelled and grown through the years together, culturally, socially, politically, and economically, as well as physically. In fact, they are practically inseparable. This has been recognized since their coterminous beginnings, but it has been especially evident since the 1950's. Since the 1950's, the Knoxville campus has grown "by leaps and bounds," both in terms of population and physical size (land area and structures).

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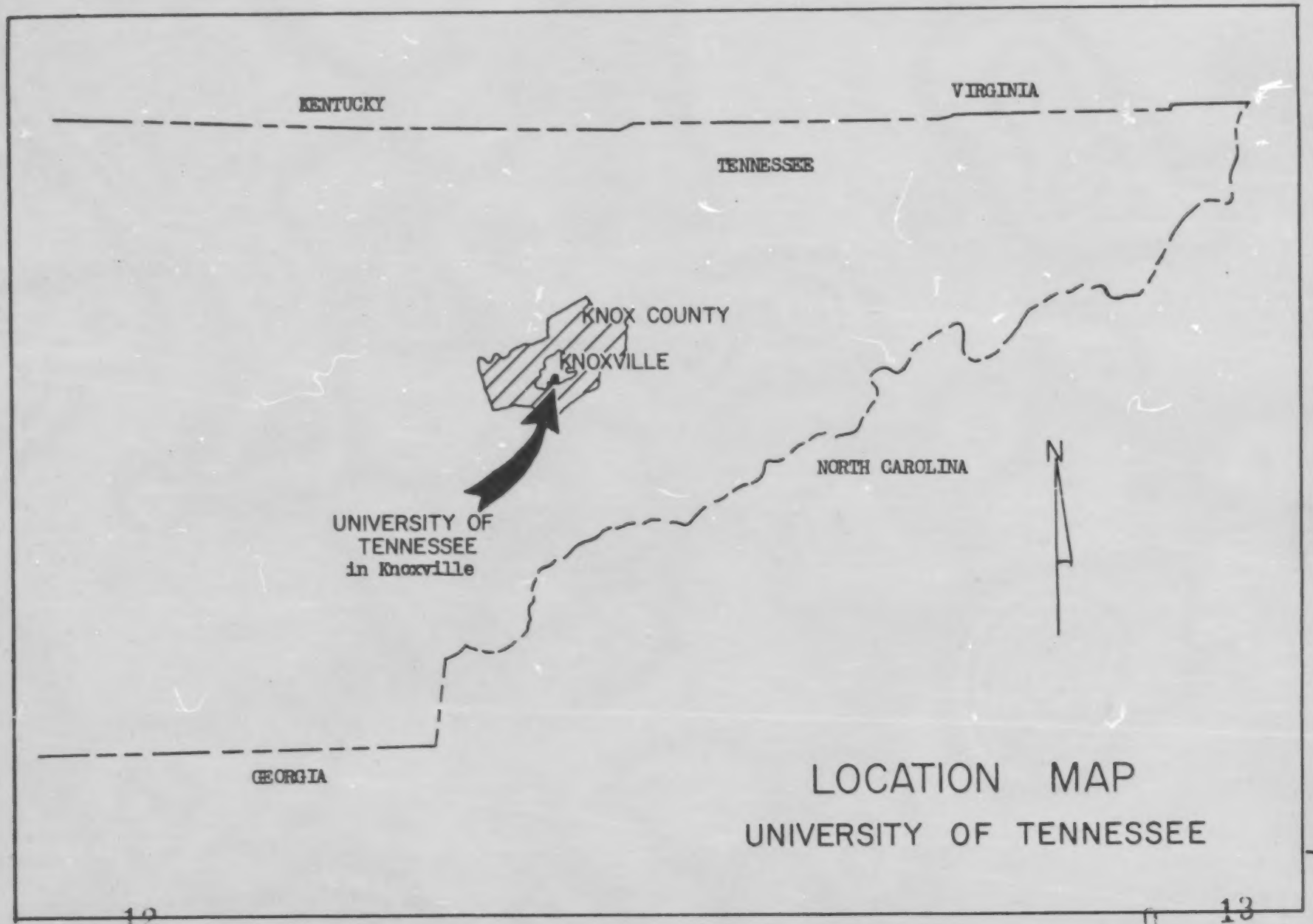
[1] See footnote 1 of the previous section.



LOCATION MAP

UNIVERSITY OF TENNESSEE

For example, Tables 1 through 3 show that the Knoxville campus's unduplicated headcount enrollment increased from approximately 12,200 in academic year 1960 to approximately 32,400 in academic year 1974, an average annual increase of some 1,440 students. By comparison, between 1950 and 1960, the increase was from an enrollment of about 10,900 to one of about 12,200, an average annual increase of 130 students; between 1920 and 1950, the average annual increase was 330. The number of full-time faculty and staff increased from 3,428 in 1966 to 5,872 in 1970, for a remarkable jump.[2] We note here also that the land area of the Knoxville campus core more than quadrupled in size in the period 1962-1970, expanding from 40 to 175 acres.[3] During the same period (1962-1970), over $100 million in new building construction occurred at U.T.K.[4]

Tables 1 through 3 give data in regard to enrollments at U.T.K. since 1840. It should be clearly understood here that U.T.K. not only

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[2] Progress and Problems: A Time for Building — Central Report/Self Study/1970 (Knoxville, Tenn.: The University of Tennessee, Knoxville, 1971), p. 189. The total number of employees, full-time and part-time, was listed as 3,600 in 1960 and 6,524 in 1971. It has been projected to increase to 7,646 in 1980 and then level off. See Hammer and Company Associates, The Economy of Metropolitan Knoxville, Prepared for the Metropolitan Planning Commission of Knoxville and Knox County (Washington, D.C.: Hammer and Company Associates, November, 1962), p. 5; and Charles B. Garrison, Projections of the Knoxville Economy to 1980 and 1990, Prepared for Greater Knoxville Chamber of Commerce (Knoxville, Tenn.: The University of Tennessee Center for Business and Economic Research, May, 1974), pp. 22, 30-31.

[3] Progress, p. 180. This figure does not include the agricultural units of the core. Another source gives the land area of the "main campus" at Knoxville, exclusive of the agricultural units, as 200 acres as of Fall, 1967. See Tennessee College Association Center for Higher Education, Tennessee Higher Education Physical Facilities Inventory Utilization Study (Nashville, Tenn.: Tennessee State Higher Education Facilities Commission, October, 15, 1968), p. 21.

[4] Progress, pp 182-7; and Vincent R. DeCarlo, "The Net Direct Economic Effect of The University of Tennessee on the City of Knoxville and on Knox County Resulting From the Expansion of the Knoxville Campus Since 1962," M.S. thesis (Finance), Univ. of Tenn., Knoxville, March, 1969, pp. 23-25.

Table 1.

The University of Tennessee
Knoxville
Cumulative Enrollment, Selected Years, 1840-1965

School Year	Enrollment	
	Graduate	Total
1839-1840		55
1874-1875		141
1899-1900		405
1909-1910	7	442
1919-1920	9	969
1929-1930	97	2,425
1939-1940	302	5,730
1949-1950	2,624	10,884
1959-1960	3,168	12,183
1960-1961	3,603	13,114
1961-1962	3,236	14,148
1962-1963	3,703	15,073
1963-1964	4,330	16,368
1964-1965	3,860	17,939

Note: Enrollment consists of Knoxville day and evening students, including special students.

SOURCE: 1975 Campus Plan, The University of Tennessee, Knoxville, Tennessee (Knoxville, Tenn.: The University of Tennessee Graduate School of Planning, May, 1966), p. 13. The totals for the period before 1950 appear to include some summer school duplicates, as, for example, another source gives 4,400 as the approximate figure for 1940 while giving 10,884 for 1950. (See The University of Tennessee Statement Prepared for The Legislative Council Committee, State of Tennessee, Submitted at Nashville, November 12, 1953, between p. 40 and p. 41.)

Table 2.

The University of Tennessee, Knoxville
Knoxville Area Degree-Credit, Unduplicated Headcount Enrollment,
1965-1977

Summer-Spring	Knoxville Day			Knoxville Evening	Knoxville Social Work	Oak Ridge Total	Knoxville Area U.T.K. Total
	Day Freshman	Day Graduate	Day Total				
1964-1965	3,912	3,607	15,766	2,173	28	364	18,331
1965-1966	3,417	3,993	17,995	2,303	28	438	20,764
1966-1967	3,642	4,139	20,054	2,674	29	393	23,150
1967-1968	2,912	4,577	22,918	2,746	27	351	26,042
1968-1969	4,119	4,679	24,685	2,826	63	391	27,965
1969-1970	4,098	4,776	25,535	4,135	49	421	30,140
1970-1971	3,942	4,769	26,429	4,517	72	429	31,447
1971-1972	4,113	5,087	27,448	4,824	91	397	32,760
1972-1973	4,030	5,210	27,610	4,676	144	373	32,803
1973-1974	10,116	4,588	27,646	4,623	149	258	32,676
1974-1975	not generated		(Fall 1974 Knoxville Area Total was 27,190)				
1975-1976	not generated		(Fall 1975 Knoxville Area Total was 29,117)				
1976-1977	not generated		(Fall 1976 Knoxville Area Total was 29,015)				

Note: Correspondence students are not included. Also, total U.T.K. enrollment, Knoxville area and otherwise, would include Chattanooga Cooperative Center, Gatlinburg, Kingsport, Memphis Social Work, Nashville Social Work, and Tullahoma Space Institute enrollments. For example, total U.T.K. enrollment in 1973-1974 was 33,711, whereas Knoxville area U.T.K. enrollment was 32,676 as given in the table. (Memphis Joint University Center enrollment was not included in the 1973-1974 total.)

SOURCES: The University of Tennessee Record, various issues, 1966-1976; and Office of Institutional Research, The University of Tennessee, Knoxville, February, 1977, Sally Williams, Data Analyst.

Table 3.

The University of Tennessee, Knoxville
Knoxville Area Degree-Credit Headcount Enrollment, By Quarter,
Summer Quarter 1973--Fall Quarter 1976

School Quarter	Knoxville Area U.T.K. Enrollment
Summer 1973	12,349
Fall 1973	25,651
Winter 1974	24,342
Spring 1974	23,263
Summer 1974	12,505
Fall 1974	27,190
Winter 1975	26,017
Spring 1975	25,071
Summer 1975	14,515
Fall 1975	29,117
Winter 1976	27,331
Spring 1976	25,882
Summer 1976	13,113
Fall 1976	29,015

Note: Knoxville Area U.T.K. Enrollment consists of Knoxville Day, Knoxville Evening, Knoxville Social Work, Oak Ridge, and Oak Ridge Biomedical Science students.

SOURCE: Office of Institutional Research, The University of Tennessee, Knoxville, February, 1977, Sally Williams, Data Analyst.

includes units of T.U.T. located in the Knoxville area but also certain units located in other areas of Tennessee. This situation presents us with a problem in terminology. It will normally be clear in this report that we are referring to units located in the Knoxville area when we use "U.T.K." Nevertheless, to be more precise, we will often use the designation "Knoxville Area U.T.K." or "U.T.K. Knoxville Area" in referring only to those units of U.T.K. located in the Knoxville area.[5]

---

[5] "Knoxville area" will be defined below.

ONTARIO
QUEBEC
NEW BRUNSWICK
MAINE
MINNESOTA
WISCONSIN
MICHIGAN
NEW YORK
VT.
MASS
CONN
IOWA
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
N.J.
MISSOURI
WEST VIRGINIA
KENTUCKY
VIRGINIA
NORTH CAROLINA
TENNESSEE
ARKANSAS
MISSISSIPPI
ALABAMA
GEORGIA
SOUTH CAROLINA
LOUISIANA
FLORIDA
Winnipeg
Duluth
Minneapolis
St. Paul
Milwaukee
Chicago
Omaha
Des Moines
Kansas City
St. Louis
Oklahoma City
Tulsa
Dallas
Fort Worth
Houston
San Antonio
New Orleans
Memphis
Nashville
Knoxville
Birmingham
Atlanta
Jacksonville
Miami
Tampa
Orlando
Detroit
Cleveland
Toledo
Cincinnati
Indianapolis
Pittsburgh
Buffalo
Toronto
Montreal
Ottawa
Quebec
Boston
New York
Philadelphia
Baltimore
Washington
Richmond
Norfolk
Charlotte
Atlanta
Savannah
Charleston
Jacksonville
700 mi.
500 mi.
Scale of Miles
0 100 200 300

KNOXVILLE, TENNESSEE, AND ITS ECONOMIC GROWTH

Knoxville, Tennessee, is the largest city in the northeastern part of Tennessee, with an early 1977 total resident population of approximately 200,000 persons. This medium-size North American city of today began in 1786 as (James) White's Fort in the then "western country" of the new United States of America. The actual town of Knoxville was founded in 1791 when William Blount, governor of the Southwest Territory, picked the location for the capital of the, also new, Territory. (Tennessee became a state in 1796. Nashville, in Middle Tennessee, is the present state capital.) Knoxville lies in the Valley of East Tennessee, a fertile area of some 9,200 square miles drained by the Tennessee River. This valley extends in a southwesterly direction through East Tennessee, being approximately 50 miles wide at the northeastern end and 30 miles wide at the southwestern end. Bounding this valley on the northwest are the Cumberland Mountains, and on the southeast are the Great Smokey Mountains. The valley is 200 miles long, lying about 100 miles on each side of Knoxville. The Farm has been important here.

Although the first industrial plant in Knoxville is said to have been James White's small water-powered corn mill, the first "big industry"

seems to have been a machine shop established in 1853 with 200 employees. Writing in 1939, a compiler tells us: "Foundries and stove works soon followed. A plant to manufacture mill machinery was started in 1885 and is still in operation. The first iron foundry was started in 1868. Flour milling has expanded gradually since 1855; brick making began as a regular industry in 1888. Ice has been manufactured since 1876. Knoxville's two largest industries today [1939] are marble and knit goods plants. Commercial marble quarrying started in 1876 and soon finishing marble became an important manufacturing operation. The first of the large textile plants was established in 1900."[1] At the end of World War II, Knoxville's two largest manufacturing industries were knit goods plants and metal and wood-working.[2] Also big as industries were The University of Tennessee and the U.S.A. "Tennessee Valley Authority," which was established in 1933 with main offices in Knoxville. In addition to these industries, Knoxville retail and wholesale trade businesses, among others, have served a wide area, as have its banking institutions, beginning with the Bank of Tennessee in 1811.

Knoxville is situated in Knox County, Tennessee, being the county seat of this 528 square mile area county. Knox County had a total resident population of approximately 300,000 persons at the beginning of

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[1]Knoxville Chamber of Commerce, Commercial and Industrial Survey of Knoxville, Tennessee (Knoxville, Tenn.: Knoxville Chamber of Commerce, June, 1939), p. I-3.

[2]Knoxville Chamber of Commerce, compiler, and Eugene C. Fretz, editor, City Data, Knoxville, Tennessee (Knoxville, Tenn.: American Institute of Real Estate Appraisers, September, 1947), also published as Industrial and Commercial Survey, Knoxville, Tennessee (Knoxville, Tenn.: Knoxville Chamber of Commerce, 1948), p. 3.

1977. Surrounding Knox County are Anderson, Blount, Union, Loudon, Roane, Sevier, Jefferson, and Grainger counties, Tennessee. In Anderson County, northwest of Knox, is found the famous Oak Ridge national research complex which grew so very rapidily during its very secret infant days of World War II. Anderson County's total population grew from 26,504 in 1940 to 59,407 in 1950! Since 1950 the resident population of Anderson County itself has grown rather slowly, standing at approximately 62,000 in early 1977. It should be noted, however, that several thousand persons commute to Anderson to work from Knox, Roane, Morgan, and other surrounding counties. Anderson County has an area of 341 square miles. Immediately south of Knox is Blount County and its center, Maryville-Alcoa, home of the Aluminum Company of America (Alcoa) industrial complex, huge in size. Blount has grown steadily. The total resident population of Blount County increased from 41,116 in 1940 to 54,691 in 1950; to 57,525 in 1960; to 63,744 in 1970; and in early 1977 Blount's resident population was approximately 70,000. Blount County has an area of 584 square miles, about one-fifth of which is included in the Great Smoky Mountains National Park. (See Table 4 for more complete population data.)

Knox, Anderson, and Blount counties, Tennessee, delineate what is called in this study the Knoxville area. They also delineate what, from 1950 until recently, was termed the Knoxville Standard Metropolitan Statistical Area (SMSA). Union County, Tennessee, directly north of Knox County, was added to the Knoxville SMSA on April 27, 1973[3]; but,

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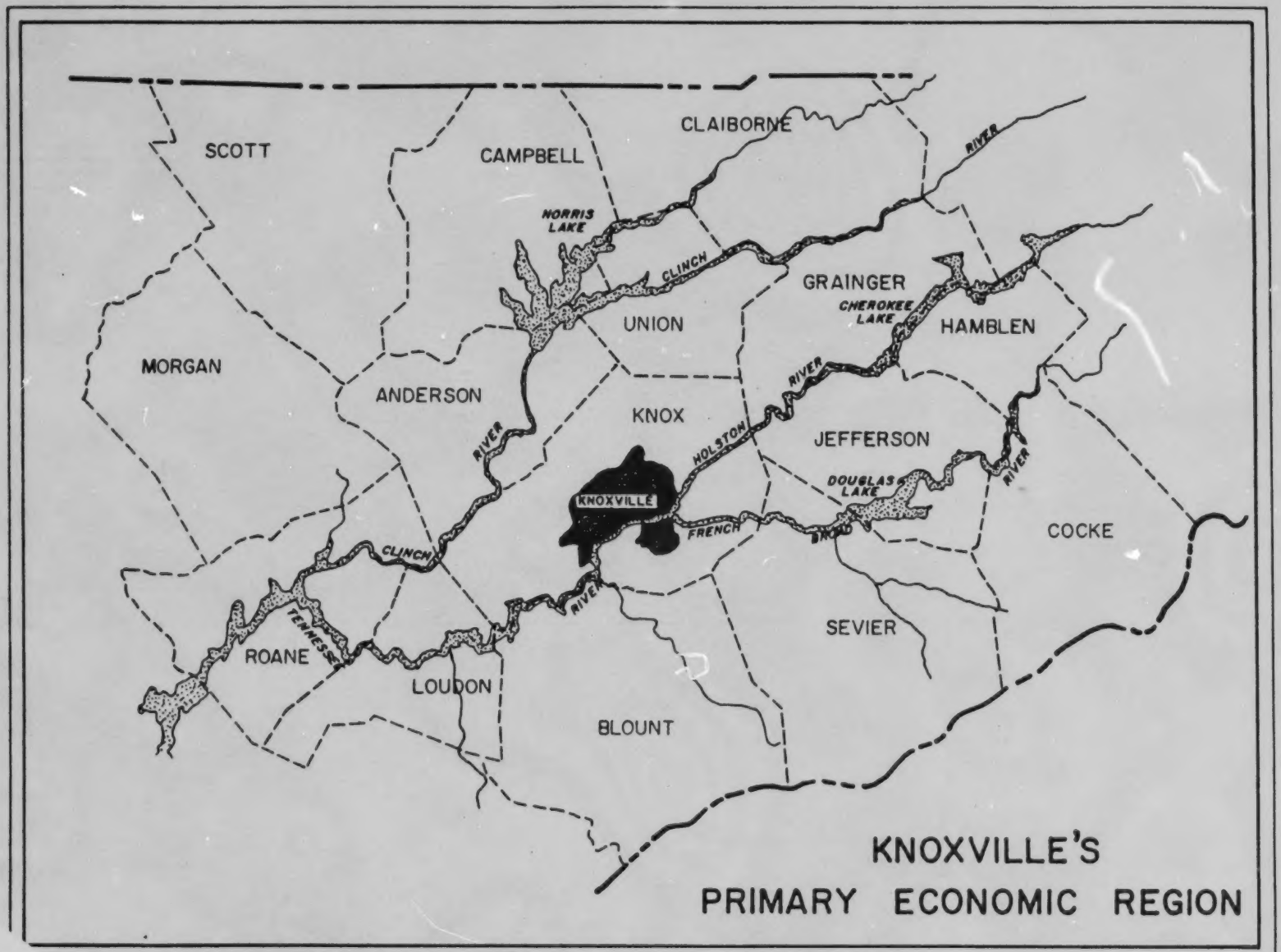
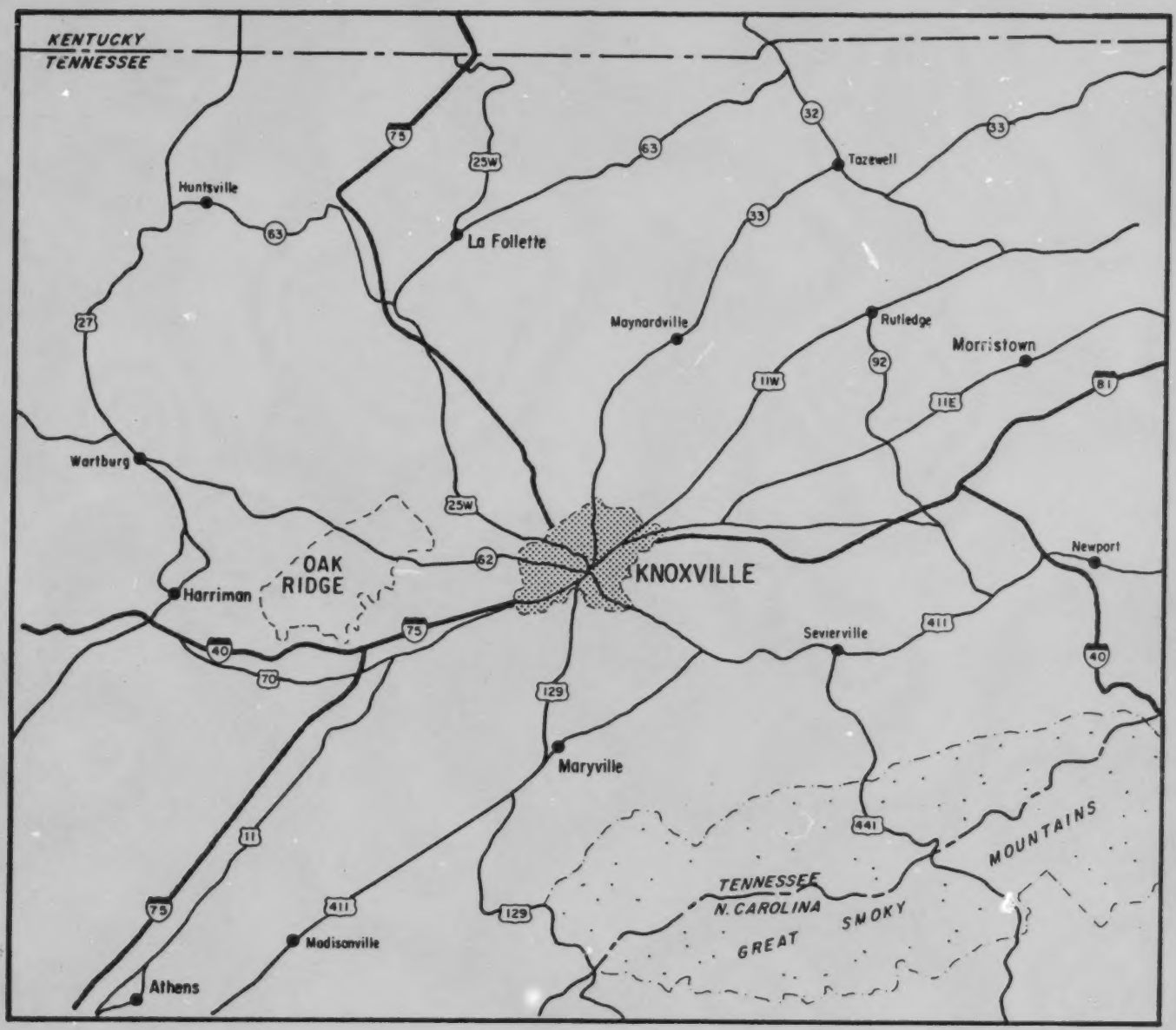
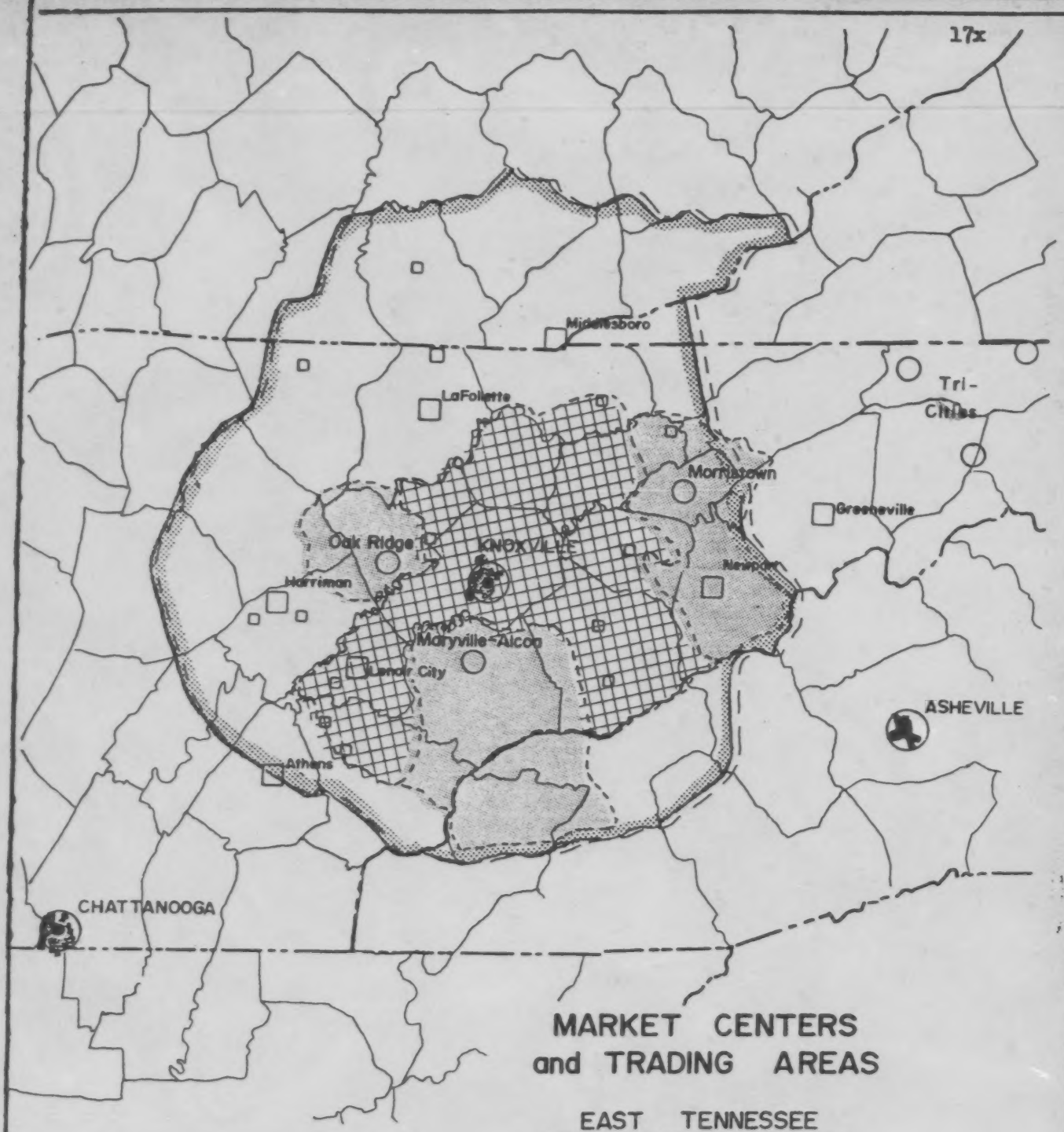
[3]Mary G. Currence, editor, Tennessee Statistical Abstract 1974 (Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, April, 1974), p. 569.


SCOTT
CAMPBELL
CLAIBORNE
RIVER
NORRIS LAKE
CLINCH
GRAINGER
CHEROKEE LAKE
HAMBLEN
UNION
MORGAN
ANDERSON
KNOX
RIVER
HOLSTON
RIVER
JEFFERSON
DOUGLAS LAKE
RIVER
KNOXVILLE
FRENCH
BROAD
COCKE
CLINCH
RIVER
TENNESSEE
SEVIER
ROANE
LOUDON
BLOUNT
KNOXVILLE'S
PRIMARY ECONOMIC REGION

REGIONAL MAP





MARKET CENTERS and TRADING AREAS

EAST TENNESSEE DEVELOPMENT DISTRICT

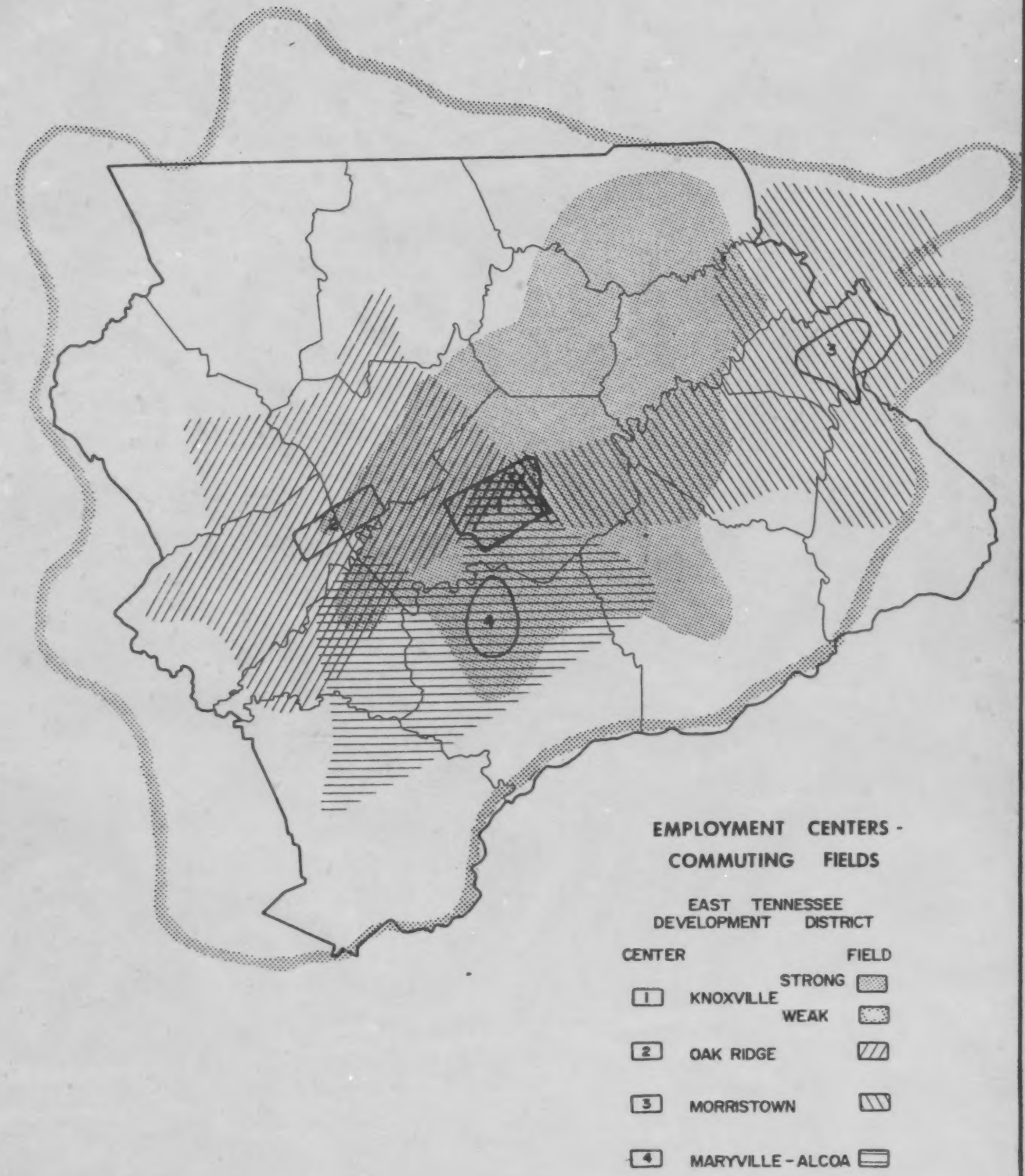
CENTERS

- REGIONAL
- MAJOR CITY
- SMALL CITY
- TOWN

TRADING AREAS

- KNOXVILLE PRIMARY
- KNOXVILLE SECONDARY
- OTHER SECONDARY

NOTE: Only those centers shown (plus Cookeville, Nashville, and Lexington—not shown) substantially affect trading in the East Tennessee Development District.


EMPLOYMENT CENTERS -
COMMUTING FIELDS
EAST TENNESSEE
DEVELOPMENT DISTRICT
CENTER
FIELD
STRONG
1 KNOXVILLE
WEAK
2 OAK RIDGE
3 MORRISTOWN
4 MARYVILLE - ALCOA

LEGEND

- ◉ Places of 100,000 or more inhabitants
- ○ Places of 25,000 to 50,000 inhabitants outside SMSA's
- □ Central cities of SMSA's with fewer than 50,000 inhabitants

Standard Metropolitan Statistical Areas (SMSA's)

TENNESSEE

18

27

28

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

Table 4.

Total Resident Population in the Three-County Knoxville Area, Tennessee, and the United States, for Selected Years, 1940-1975

	April 1, 1940	April 1, 1950	April 1, 1960	April 1, 1970	Percent Δ (1940-70)
Knox County, Tenn.	178,468	223,007	250,523	276,293	55
Anderson County, Tenn.	26,504	59,407	60,032	60,300	128
Blount County, Tenn.	41,116	54,691	57,525	63,744	55
Knoxville Area	246,088	337,105	368,080	400,337	63
Tennessee (000=M)	2,916M	3,292M	3,567M	3,924M	35
United States (000=M)	131,669M	150,697M	179,323M	203,235M	54

	July 1, 1971	July 1, 1972	July 1, 1973	July 1, 1974	July 1, 1975(P)
Knox County, Tenn.	282,900	286,000	286,600	287,300	295,100
Anderson County, Tenn.	61,600	61,000	61,000	62,000	61,200
Blount County, Tenn.	64,200	64,600	67,400	68,700	69,600
Knoxville Area	408,700	411,600	415,000	418,000	425,900
Tennessee (000=M)	3,988M	4,072M	4,095M	4,129M	4,188M
United States (000=M)	206,219M	208,234M	209,859M	211,289M	213,032M

SOURCES: U. S. Bureau of the Census, Census of Population, for the years 1940, 1950, 1960, and 1970; U. S. Department of Commerce Bureau of Economic Analysis, Regional Economics Information System, data printout, May, 1976, for the years 1971, 1972, 1973, and 1974, for the counties and Tennessee; U. S. Bureau of the Census, Current Population Reports, Series P-26, No. 75-42, issued August, 1976, for the provisional (P) estimate for 1975, for the counties and Tennessee; and ibid., Series P-25, No. 644, issued December, 1976, for the years 1971 through 1975, for the United States.

since all the secondary and nearly all the primary sources for this study have dealt with the three-county Knox-Anderson-Blount area, we have chosen to deal with the same area. Comparisons with earlier sources (studies) will thus be more meaningful or, at least, a bit easier. The Knoxville area (Knox-Anderson-Blount area) had a total resident population in 1950 of 337,105 persons; by early 1977 the population had reached approximately 435,000.

Tables 5 through 8 give summary data in regard to the Knoxville area's current historical trends in employment and personal income. A study of the Knoxville area livelihood structure at the end of the 1950's gave this picture:

> "Metropolitan Knoxville's economy is comparatively diversified. Its . . . non-farm jobs are about equally divided between goods-producing and service-producing industries. Manufacturing is the largest single employer in the economy, but trade, government and services are also major sectors.
>
> "In its employment profile, Metropolitan Knoxville's differs from those of other major metropolitan economies in Tennessee. Chattanooga and the Tri-Cities (Kingsport, Bristol and Johnson City) --- also located in the Great Valley of East Tennessee --- are more dependent on manufactoring than Knoxville. The Knoxville economy functions more as a services-producing center than either Chattanooga or Tri-Cities. However, the economy of Nashville with its state government, college and insurance activities is far more specialized in services-producing industries than either Knoxville, Chattanooga or the Tri-Cities.
>
> "Four major enterprises provide important supports for Metropolitan Knoxville's economy. Two are manufacturing enterprises --- the AEC operations at Oak Ridge and the aluminum plants at Alcoa; two are non-manufacturing enterprises --- the University of Tennessee and the Tennessee Valley Authority. AEC is the largest employer in the area, employing twice the work-force of Alcoa, the second largest . . . .
>
> "Together, the four big enterprises employed . . . 25 percent of all non-farm wage and salary workers employed by the metropolitan economy." [4]

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[4] Hammer and Company Associates, The Economy of Metropolitan Knoxville (Washington, D.C.: Hammer and Company Associates, November, 1962), pp. 2-5.

Table 5.

Employment By Broad Industrial Classification, Three-County Knoxville Area; and Total Employment, Three-County Knoxville Area, Tennessee, and United States; 1940, 1950, 1960, 1970 (By Residence)

Knoxville Area Employment By Broad Industrial Class	1940	1950	1960	1970	Percent Δ (1940-70)
Agriculture	9,203	6,994	3,716	2,077	-77
Mining	2,991	2,124	1,384	901	-70
Contract Construction	4,410	11,275	9,018	10,102	129
Manufacturing	23,795	32,231	39,914	40,286	69
Transportation, Communication, and Public Utilities	5,531	8,865	8,180	10,681	93
Wholesale and Retail Trade	14,235	22,849	25,692	30,709	116
Finance, Insurance, and Real Estate	1,850	2,650	4,102	5,781	212
Services	16,317	22,384	30,349	43,340	166
Government	3,300	5,461	5,223	6,356	93
TOTAL	81,632	114,833	127,578	150,233	84

Total Employment	1940	1950	1960	1970	Percent Δ (1940-70)
Knox County, Tenn.	62,280	78,561	89,514	105,130	69
Anderson County, Tenn.	7,095	19,628	19,866	21,784	207
Blount County, Tenn.	12,257	16,644	18,198	23,319	90
Knoxville Area	81,632	114,833	127,578	150,233	84
Tennessee (000=M)	942M	1,153M	1,247M	1,495M	59
United States (000=M)	45,376M	57,475M	66,373M	79,308M	75

SOURCE: U. S. Department of Commerce, Regional Employment By Industry, 1940-1970: Decennial Series for United States, Regions, States, Counties, A Supplement to the Survey of Current Business (Washington, D.C.: U. S. Government Printing Office, 1975), pp. 360, 361, 368, XIII.

Table 6.

Total Personal Income and Per Capita Personal Income,
Three-County Knoxville Area, Tennessee, and the United States,
Selected Years, 1940-1969
(Residence Adjusted)

	Total Personal Income, $(000) Current				
	1940	1950	1959	1969	% Δ 1940-69
Knoxville Area	113,000	451,700	664,300	1,240,100	997
Tennessee	995,000	3,295,000	5,394,000	11,233,000	1,029
United States	78,522,000	226,214,000	380,964,000	745,869,000	850

	Per Capita Personal Income, $ Current				
	1940	1950	1959	1969	% Δ 1940-69
Knoxville Area	456	1,331	1,828	3,109	582
Tennessee	339	994	1,532	2,882	750
United States	595	1,496	2,161	3,705	523

SOURCE: George Kronbach, Personal Income Estimates: Tennessee, The Southeast and The Nation, 1929 to 1970; With County Data for Selected Years, 1929 to 1969 (Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, February, 1972), pp. 3, 5, 20, 21. These estimates were made by the U. S. Department of Commerce Bureau of Economic Analysis, and they are revised from time to time.

Table 7.

Total Employment, Three-County Knoxville Area,
1970-1974, By County and Area
(Not Residence Adjusted)

	1970	1971	1972	1973	1974
Knox County, Tenn.	120,301	124,471	131,917	138,310	140,503
Anderson County, Tenn.	27,552	29,010	29,726	29,422	30,234
Blount County, Tenn.	22,856	20,596	20,767	21,206	21,997
Knoxville Area	170,709	174,077	182,410	188,938	192,734

Table 8.

Total Personal Income, Three-County Knoxville Area,
1970-1974, By County and Area

	Not Residence Adjusted, $(000) Current				
	1970	1971	1972	1973	1974
Knox County, Tenn.	933,028	1,033,884	1,148,159	1,291,651	1,431,328
Anderson County, Tenn.	270,224	297,822	322,300	341,354	380,988
Blount County, Tenn.	179,139	179,105	191,114	220,001	250,506
Knoxville Area	1,382,391	1,510,811	1,661,573	1,853,006	2,062,822
	Residence Adjusted, $(000) Current				
	1970	1971	1972	1973	1974
Knox County, Tenn.	899,487	987,198	1,087,975	1,217,081	1,349,786
Anderson County, Tenn.	203,157	224,543	243,954	262,170	291,073
Blount County, Tenn.	196,176	204,147	221,920	254,976	287,906
Knoxville Area	1,298,820	1,415,888	1,553,849	1,734,227	1,928,765

Note: "Not Residence Adjusted" means the totals given are by place of work, and, thus, we are speaking of an area extended.

SOURCE: U. S. Department of Commerce Bureau of Economic Analysis, Regional Economics Information System, data printout, May, 1976.

As of 1960, The University of Tennessee accounted directly for some 3 percent of total Knoxville area resident employment (3,600 of 127,578).[5] A more important statistic to an investigator in the early 1960's was that between 1948 and 1960, The University of Tennessee was the only one of the "big four" to show an increase in the total number of employees (from 2,000 to 3,6000, or 80%).[6]

In a recent economic base (-shift and shares) analysis of Knoxville area economic activity, Professor Charles B. Garrison summed up the area's contemporary experience as follows:

> "The economic base analysis indicates that the major sources of economic growth in the Knoxville metropolitan area during the 1960's were manufacturing, especially chemicals, primary metals, and apparel; The University of Tennessee, including student expenditures; the local offices of the Tennessee Valley Authority; and Knoxville's position as a trading center for the surrounding area. The area's growth rate in manufacturing was somewhat below the rates enjoyed elsewhere, including other metropolitan areas in the state. The implication is that Knoxville's economy is a diverse one, especially in the number of sources of basic economic activity.[7]

According to Dr. Garrison's study, The University of Tennessee accounted directly for some 15 percent of the total increase in basic personal income of the Knoxville area during the 1960's. As a source

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[5] See footnote 2 of the previous section and Table 5 of this section.

[6] Clenton James Smith, "The Economic Impact of the University of Tennessee Upon Metropolitan Knoxville," M.S. thesis (Geography), The University of Tennessee, Knoxville, Tennessee, August, 1964, pp. 24, 50; and Hammer and Company Associates, op. cit., p. 17.

[7] Charles B. Garrison, Projections of the Knoxville Economy to 1980 and 1990, Prepared for Greater Knoxville Chamber of Commerce (Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, May, 1974), p. 1. The terms "economic base" and "basic" will be discussed below.

of basic personal income growth, the institution was outranked only by Transfer Payments (27%) and by Chemicals and Primary Metals Manufacturing (20%).[8] In 1970 itself, according to Dr. Garrison's figures, T.U.T. accounted directly and indirectly for 8 percent of the Knoxville area's total personal income.[9] Also, as of 1970, The University of Tennessee accounted directly for over 4 percent of total Knoxville area resident employment (6,500 of 150,000).[10]

Another investigation of the Knoxville area activities of The University of Tennessee, conducted for the fiscal years 1972, 1973, and 1974, concluded that such activities directly and indirectly accounted for 10 to 13 percent of the total personal income received in the area in each of those years.[11] This investigation also offered dollar estimates of the net "human capital" value contributed to the East Tennessee

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[8] Garrison, Projections, p. 13. The personal income estimates were on the basis of the Knoxville area as a place of work (see "Note" to our Tables 7 and 8). Student and visitor expenditures were counted as part of T.U.T.; only the payroll of T.U.T. itself was considered.

[9] Ibid., pp. 8, 9. See comment to footnote 8 immediately above.

[10] See footnote 2 of the previous section and Table 5 of this section.

[11] John R. Moore and Craig G. Ericksen, The Direct and Indirect Economic Impacts of UTK on the Knoxville Area, 1971-1972 (Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, June 5, 1973, Volume XIII, Number 80), p. 11, The Direct and Indirect Economic Impact on the Knoxville Area of Units of The University of Tennessee Located at Knoxville, 1972-1973 (Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, September 20, 1974, Volume XV, Number 2), p. 2, The Direct and Indirect Economic Impact on the Knoxville Area of Units of The University of Tennessee Located at Knoxville, 1973-1974 (Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, January 15, 1976, Volume XIV, Number 3), p. 2. T.U.T. purchases were included.

region by Knoxville units of T.U.T. during the same years. The benefit/cost ratios for the three years were, respectively, 5.11, 4.9, and 5.24.[12]

We will return to general Knoxville area economic activity and to roles therein, but now we will focus our attention on the milieu of residence halls at U.T.K. We need to know about roles therein first.

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[12] Moore and Ericksen, op. cit., p. 17, p. 3, and p. 3, respectively. "Net Human Capital" was defined as "the estimated additional lifetime earning capacity due to the additional education provided by the University of Tennessee" (ibid., first reference, p. 16).

RESIDENCE HALLS AND EDUCATION AT U.T.K.: AN OLD PREJUDICE

Over the years, the University's (U.T.K.'s) residence halls have universally been considered a central aspect of its educational programs. The University's immediate administrators have certainly considered it so. Witness, for example, the statement by the University's President in 1953 that of the "five basic and fundamental requirements in developing and maintaining a strong and outstanding University," number four is (was):

> "Adequate living accommodations in residence halls and fraternities, healthy and safe, providing a daily environment conducive to stimulating social experience, in which students can do their best work."[1]

It should be pointed out that this particular statement was made at a time when the post World War II and post Korean War role of the State of Tennessee in post-highschool education was under serious study. It appears typical of the administrators' long-standing positions in regard to residence halls. But, while this is the case, it is also true that in recent decades the University has adopted an accounting system

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[1] "The University of Tennessee Statement Prepared for the Legislative Council Committee, State of Tennessee, Submitted at Nashville, November 12, 1953," pp. 37-38. (Copy in U.T.K. Library, Knoxville, Tennessee).

which specifically labels residence halls as "auxiliary enterprises." This labeling is unfortunate and misleading.[2] The University's administrators still "recognize" the "importance" of residence halls in the total educational process.[3] An excellent indication of this importance, to all concerned, is the fact that the role of residence halls has constituted a major battleground in one of the most prevalent college issues in recent years: the so-called *in loco parentis* controversy. And while the University administrators have stated that they are "patently abandoning *in loco parentis*,"[4] close observers of the situation emphasize that this should not be equated with abandoning residence halls as a central aspect of the University's educational programs.

In the early 1960's, American educators were saying that college housing would "certainly play a more vital role in the educational process" in the years ahead.[5] And they were pointing to what the commuting

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[2]The accounting system adopted is essentially that developed by the American Council on Education. An updated exposition of this system can be found in College and University Business Administration, Third Edition (Washington, D.C.: National Association of College and University Business Officers, 1974), xiii, 267 pp. Also, see Financial Reporting for Tennessee Public Colleges and Universities (Nashville, Tenn.: Tennessee State Department of Finance and Administration, Tennessee State Comptroller of the Treasury, and Tennessee State Higher Education Commission, 1969 or 1970), ca. 150 pp.

[3]See, for example, Progress and Problems: A Time for Building --- Central Report/Self-Study/1970 (Knoxville, Tenn.: The University of Tennessee, Knoxville, 1971), pp. 155-156. Also, see, not to mention it, Handbook for Residence Hall Life, University of Tennessee, Knoxville, 1976-1977 (Knoxville, Tenn.: The University of Tennessee at Knoxville, 1976), p. 2.

[4]Progress and Problems, p. 11.

[5]See, for example, Harold C. Riker with Frank G. Lopez, College Students Live Here: A Study of College Housing (New York, N.Y.: Educational Facilities Laboratories, Inc., 1961), p. 7, and elsewhere.

student was missing already, many saying the heart of the matter was that "the opportunities through activities in living together are just about as valuable as what goes on in the classrooms and laboratories."[6] These beliefs are still prominent today in college educational circles and they are still prominent at U.T.K.[7]

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[6] J. Paul Slaybaugh, quoted in Riker and Lopez, op. cit., p. 28.

[7] Among printed sources, see, especially, Campus in Transition (New York, N.Y.: Educational Facilities Laboratories, Inc., 1975). Also, see Progress and Problems, pp. 153-156, and elsewhere therein; as well as Higher Education For Tennessee's Future: A Master Plan for Higher Education Developed by the Tennessee Higher Education Commission (Nashville, Tenn.: State of Tennessee, January, 1973), pp. 84-87.

According to a recent bibliographical study of the role of residence halls, the literature concerning them "has apparently completed a cycle with a return to the principle of 'community.' " See Larry H. Ebbers, Kenneth E. Marks, and Kenneth L. Stoner, Residence Halls in U. S. Higher Education: A Selected Bibliography (Ames, Iowa: Iowa State University Library, 1973), pp. iii-v. This "return" perhaps also has taken the form, so far as the T.U.T. administrators are concerned, in the change of focus from "quantity" to "quality," as the rate of enrollment growth has slowed in recent years. See The Changing Emphasis: 1972-73 Annual Report of Edward J. Boling, President, The University of Tennessee, To The Board of Trustees/June 21, 1973 (Knoxville, Tenn.: The University of Tennessee, December, 1973), p. 3 and elsewhere.

RESIDENCE HALLS AND STUDENTS AT U.T.K.

There are various and sundry reasons why students are enrolled at U.T.K., no doubt. However, we generally like to believe that the main reason students are enrolled at U.T.K. is to "get an education." We would not normally conclude that students are enrolled at U.T.K. primarily because they can thereby qualify to live in the residence halls. (Strictly speaking, the residence halls operated by the U.T.K. Department of Residence Halls are designated for unmarried students, that is, for students who do not have spouses. U.T.K. also operates housing units, primarily for married students, through its Office of Rental Properties.) On the other hand, when a student applies for admission to U.T.K., he or she normally realizes that residence halls --- and associated facilities and activities --- are a big part of the total package being offered.[1] Unmarried first-year students are in

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[1]Over 70 percent of the entering first-year students at U.T.K. gave "college housing" consistently as their choice of housing over the period 1965-1970. Only about 5 percent gave "off-campus room or apartment" as their choice. The rest said their choice was to live "at home or with relatives." All entering first-year students were included, both those from the Knoxville vicinity and those from other areas. See Suzanne Larsen, Trends in the Class Profile of Entering Freshman at The University of Tennessee at Knoxville, 1965-1970 (Knoxville, Tenn.: The University of Tennessee, Knoxville, Office of Institutional Research, September 10, 1971), p. 9.

fact required to reside in University residence halls "when space is available unless they commute from the home of their parent or legal guardian."[2] Furthermore, upperclass students have been encouraged in a number of unabashed ways, economically and socially, to reside in University housing. All this boils down, again, to the fundamental fact that U.T.K. has been built, physically and educationally, into its residence halls; and it is thereby extremely difficult conceptually to expunge or isolate residence halls from the "rest" of the University. This conceptual difficulty is ever-present and ever-nagging as we go about trying to examine economic impacts of the U.T.K. Department of Residence Halls.

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[2]The University of Tennessee Record, General Catalog/Knoxville/ 1976/77 (Knoxville, Tenn.: The University of Tennessee, Knoxville, March, 1976, Volume 79, Issue No. 2), p. 22.

WHY ARE THE RESIDENCE HALLS THERE?

There seem to be two outstanding and closely related rationales why residence halls have been built and operated by U.T.K. The first, and certainly the most insightful for us, is that U.T.K. has traditionally been corely a "resident university" and its administrators have considered residence halls as fundamental to its total educational program. We have discussed this matter above. The second rationale can perhaps best be stated by quoting from surely the most comprehensive long-range study of Tennessee State post-highschool education since World War II:

> "Housing. It is the policy of the institutions to provide their students with suitable housing at reasonable cost to them and without subsidy by the institutions. Residence halls for single students and apartments for married students are considered essential by most institutions since in most areas the supply of private lodgings fall far short of meeting student housing needs." [1]

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[1] Tennessee State Education Survey Subcommittee Staff, Public Higher Education in Tennessee: A Report to the Education Survey Subcommittee of the Tennessee Legislative Council Committee (Nashville, Tenn.: State of Tennessee, December, 1957), p. 151. All underlining added, except for the first word of the quote.

An earlier --- and perhaps even more revealing --- immediate post World War II report speaks of the "serious housing problems," and, in particular, of the economic "injustice" and "discrimination," especially to low-income students, due to the fact that off-campus housing costs were then some 150 percent greater than on-campus housing costs, and to the fact that almost twice as many students were "rooming in town as there were staying in facilities provided by the University," the University facilities remaining overcrowded all the while.[2]

Just prior to U.T.K.'s big physical expansion in the 1960's --- during which time ten new residence halls for unmarried students were constructed at a cost of about $30 million --- the University administrators pled for the expansion on the basis that they were then turning away qualified students due to a "lack of housing."[3]

Thus, the University administrators say they believe that private enterprise will not in fact provide enough of the type of housing which they believe is suitable for accomplishing the University's educational

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[2]See Public Education in Tennessee: A Study of Tennessee's Program of Public Education and Suggestions for Continuing Its Development, A Report Prepared in Accordance With Chapter 121--Public Acts of Tennessee, 1945 (Nashville, Tenn.: Tennessee Department of Education, 1946, 1948), pp. 131-132.

[3]Vincent R. DeCarlo, "The Net Direct Economic Effect of The University of Tennessee on the City of Knoxville and on Knox County Resulting from the Expansion of the Knoxville Campus Since 1962," M.S. thesis (Finance), The University of Tennessee, Knoxville, Tennessee, March, 1969), p. 1, referring to the article "U. T. Asks Funds for Westward Push," The Knoxville Journal (Knoxville, Tenn.), January 26, 1960, p. 2. U.T.K. also expanded to provide six new housing apartment complexes for some 1,700 married students.

mission. Of course, a true free enterpriser would quickly point out that the case was never really tested, that if U.T.K. had not in fact provided, or maintained the policy of seeking to provide, extensive student housing itself, say during the big buildup of the 1960's, that there would have been a demand looking for a supply, and that where such is the case the necessary supply would have materalized. But, then, the administrators could possibly retort that supply sufficient to meet what they (the administrators) considered suitable housing needs at reasonable cost would not in fact have been forthcoming. Again, however, the true free enterpriser is left with a sticky point: The case was never really put to the test at U.T.K., even for prejudged administratively approved housing specifications.

In such a "contest," it appears that the first rationale given above would emerge as most supporting in the housing decisions actually taken by University administrators.

THE U.T.K. DEPARTMENT OF RESIDENCE HALLS (DEPARTMENT)

The University of Tennessee in Knoxville is a large, many-facitited entity comprised of people, land, water, air, buildings, money, and so on. These elements are integrated in a social structure highlighted by such conspicuously visible constructions as students, teachers, classrooms, libraries, sports facilities, residential buildings, cafeteries, and parking lots. Quite a number of people who are employed by the University (about 7,000 in 1976) are called staff people. There are the breakdowns of the staff by type of employee. Faculty, administrative, teaching, non-teaching, professional, non-professional, full-time, part-time, student, non-student, and part-time professional student teaching, are some. Then, there are the "departments." Highly visible are the "teaching," or "educational," or "academic disciplinary," departments. Less visible are the organizational lines dividing the "administrative" and "service" departments of the University. Different groups of people have been organized and charged with certain "administrative" and/or "service" responsibilities. These groups are not supposed to be engaged heavily in the pure education of students, according to a prominent perspective. We have already suggested in earlier sections of this report the sheer absurdity of such a perspective. Nevertheless, when following the flow of money

throughout the University, these organized groups stare us in the face. When roles are contemplated, these, essentially financial reporting, conceptions play our thoughts. One of the organized groups at U.T.K. is the U.T.K. Department of Residence Halls. Of what does it consist, and in what sense(s), and to what extent(s), does it have economic impacts on U.T.K. and the Knoxville area? We are surveying these questions in this report.

The U.T.K. Department of Residence Halls (hereafter referred to often as simply the Department) has the immediate responsibility of overseeing certain aspects of a system of residence halls located on the U.T.K. Knoxville campus. By U.T.K. residence hall, we will mean a large residential building operated by U.T.K. where students of U.T.K. reside. The U.T.K. Department of Residence Halls, it is important to note, does not have responsibilities in regard to all of U.T.K.'s residence halls. There are U.T.K. residence halls which are open only to unmarried students and U.T.K. residence halls which have been[1] open only to married students (and their spouse or family). Married-students residence halls are not operated by the Department, but, instead, all such U.T.K. halls are under the immediate oversight of the U.T.K. Office of Rental Properties.[2] The unmarried-

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[1] We say "have been" because it was announced in February, 1977, that for the first time, certain married-students housing would be open to unmarried graduate students. See "Married Student Housing Opens to Single Grads," The Graduate Cause (The University of Tennessee, Knoxville, Tenn.), vol. IV, no. 2 (March, 1977), p. 1.

[2] As of March, 1977, the residence halls operated by the U.T.K. Office of Rental Properties consisted of nine(9) apartment complexes by name. Eight of these were situated in Knoxville and one in Oak Ridge. They were: Golf Range Apartments, three miles west of the U.T.K. center, 420 units, 140 one-bedroom and 280 two-bedroom apartments; Woodland Apartments, two

students residence halls were for decades officially called dormitories and they are still commonly called "dorms" by both students and non-students. The married-students halls are usually called "apartments."

Another point to note is that the U.T.K. Department of Residence Halls does not have immediate, official, responsibilities over all aspects of the halls in which it is involved. For example, some of the halls (buildings) have within them dining halls or personal supply facilities. Such are operated by the U.T.K. Food Services Department and by the U.T.K. Bookstore, respectively. Also, the motor vehicle parking lots around and near the halls are under the jurisdiction of the U.T.K. Parking Authorities. While all these different aspects, or facilities, go into what we might call "residence hall" or "on-campus" life, they come under separate U.T.K. organizational units, and financial reports of money flows are compiled on each. The four U.T.K. organizational units mentioned above are included in a larger accounting fund grouping called Auxiliary Enterprises, which also includes, at U.T.K., the Athletic Department, Panhellenic Building, and Fraternity Housing. The direct importance of "auxiliary enterprises" as a source and as a use of income for U.T.K. can be gleaned from Tables 9 and 10, which indicate that during fiscal year 1974 Auxiliary Enterprises accounted <u>directly</u> for some 24 percent of U.T.K.'s income and for the same

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[footnote 2, continued]

miles south, 150 units, 102 ones and 48 twos; Taliwa Court Apartments, two and one-half miles south, 80 twos; Taliwa Court Addition, two and one-half miles south, 60 twos; Laurel Apartments, four blocks north, 320 units, 160 ones and 160 twos; Kingston Apartments, one mile west, 240 units, 120 ones and 120 twos; Sutherland Apartments, three miles west, next to Golf Range, 420 units, 240 ones, 144 twos and 36 threes; and Oak Ridge Apartments in Oak Ridge, Tennessee.

Table 9.

The University of Tennessee, Knoxville
Current Income
Fiscal Year 1974

CURRENT INCOME	Current Dollars	% of Total Income
Auxiliary Enterprises		
Residence Halls		
Department of Residence Halls	4,519,582.00	5.675
Office of Rental Properties	2,137,607.91	2.684
Total Residence Halls	6,657,189.91	8.359
Food Services Department	3,893,260.91	4.888
Bookstore	3,551,125.78	4.459
Parking Authorities		
Parking Authority	467,293.68	0.587
Other Parking	120,905.72	0.152
Total Parking Authorities	588,199.40	0.739
Athletic Department	3,893,495.86	4.889
Other Auxiliary Enterprises		
Panhellenic Building	63,147.45	0.079
Fraternity Housing	149,685.99	0.188
Total Other Auxiliary Enterprises	212,833.44	0.267
TOTAL AUXILIARY ENTERPRISES	18,796,105.30	23.600
State Appropriations	33,673,917.25	42.281
Student Fees	14,511,879.36	18.221
Other	12,661,759.67	15.898
TOTAL INCOME	79,643,661.58	100.000

SOURCE: Report of the Treasurer for the Year Ended June 30, 1974, The University of Tennessee (Knoxville, Tenn.: The University of Tennessee, 1974), pp. 14-24, 174-187.

Table 10.

The University of Tennessee, Knoxville
Current Outlay
Fiscal Year 1974

	Current Dollars	% of Total Outlay
CURRENT OUTLAY		
Auxiliary Enterprises		
Residence Halls		
Department of Residence Halls*	4,526,593.00	5.822
Office of Rental Properties*	2,129,330.50	2.738
Total Residence Halls*	6,655,923.50	8.560
Food Services Department*	3,806,805.87	4.896
Bookstore**	3,195,441.44	4.110
Parking Authorities		
Parking Authority***	233,748.89	0.301
Other Parking***	318,852.26	0.410
Total Parking Authorities***	552,601.15	0.711
Athletic Department***	3,944,149.93	5.073
Other Auxiliary Enterprises		
Panhellenic Building***	63,147.45	0.081
Fraternity Housing***	149,685.99	0.193
Total Other Auxiliary Enterprises***	212,833.44	0.274
TOTAL AUXILIARY ENTERPRISES	18,367,755.30	23.623
Other†	59,385,069.69	76.377
TOTAL OUTLAY#	77,752,824.99	100.000

*Includes, among others, "administrative charge," and debt service transfers (both "mandatory" and "non-mandatory").

**Was billed neither an administrative charge nor any debt service transfers.

***Includes debt service transfers. Was billed no administrative charge, apparently.

†Does not include current transfers.

#Does not include current transfers, except for Auxiliary Enterprises.

SOURCE: Report of the Treasurer for the Year Ended June 30, 1974, The University of Tennessee (Knoxville, Tenn.: The University of Tennessee, 1974), pp. 14, 25-53, 174-187.

Table 11.

Department of Residence Halls
The University of Tennessee, Knoxville
Financial Statements for Selected Fiscal Years,
1960-1976
($ Current)

	Fiscal 1960	Fiscal 1965	Fiscal 1970	Fiscal 1974	Fiscal 1976
REVENUES					
Rental Revenues	413,143	1,169,708	2,688,652	4,352,196	4,811,359
Other Revenues	11,600	57,421	122,708	167,386	224,385
TOTAL REVENUES	424,743	1,227,129	2,811,360	4,519,582	5,035,744
EXPENSES					
Operating Expenses	275,128	675,693	2,105,923	2,832,338†	3,561,956†
Debt Service*	107,356	459,239	780,175	1,408,565*	1,401,467*
TOTAL EXPENSES	382,484	1,134,932	2,886,098	4,240,903	4,963,423
EXCESS OF REVENUES (DEFICIT) OVER EXPENSES	42,259	92,197	(74,738)	278,679	72,321
LESS TRANSFERS (To Funds for Retirement of Indebtedness)**			9,965**	285,690**	60,094**
EXCESS OF REVENUES (DEFICIT) OVER EXPENSES & TRANSFERS			(84,703)	(7,011)	12,227
Additional Debt Service Paid From Other Sources					
From Interest on Tennessee State School Bond Authority Reserve Fund			12,983	97,697	118,893
From Other Sources			263,137	144,401	131,599
TOTAL ADDITIONAL DEBT SERVICE			276,120	242,098	250,492

†Includes administrative charge.

*"Mandatory Transfers."

**"Non-Mandatory Transfers."

SOURCES: Report of the Treasurer for the Year Ending June 30, 1960, The University of Tennessee, . . . , 1965, . . . , 1970, . . . , 1974, . . . , and 1976 (Knoxville, Tenn.: The University of Tennessee, 1960, 1965, 1970, 1974, and 1976), pp. 70-71, 80-81, 154-155, 178-179, and 188-189, respectively.

percentage of its money outlay. Notice that the Department of Residence Halls itself accounted directly for approximately 6 percent of both income and outlay. These percentages underscore the oft-heard remark that Auxiliary Enterprises are "self-supporting," or that they "pay their own way." All outlays come from own revenues. Notice, too, that as a direct source of income, Auxiliary Enterprises was outranked only by State Appropriations of 42 percent. Among "auxiliary enterprises," the Department of Residence Halls ranked ahead of all others as a direct source of income. Table 11 shows the trends in the Department of Residence Halls' revenues and expenses during the period 1960-1976. In constant dollars, the increase in revenues was about 665 percent, while the increase in expenses was about 730 percent during the sixteen year period.[3] The main reason for the difference in the percentage growths of revenues and expenses is that prior to the big physical expansion of the 1960's, surpluses were greater because debt service and other transfers were much less.

We will insert just here the announcement that in much of what follows, the years fiscal-1974 and calendar-1974 will be the lastest time-periods with which we deal. This is because 1974 is the last year for which "full data" were immediately available to the researcher, and, because a recent period or periods was suggested for estimating economic impacts. U.T.K. is itself reported on a fiscal year basis, while organizations reporting on major area economic and demographic categories --- especially personal income and employment --- are usually on a calendar

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[3]The implicit deflator for personal consumption expenditures was used here.

year basis. What we do here is give some historical fiscal year data on U.T.K., as this was readily available, but, then, for actual estimates we calculate on a calendar year basis. It turns out that fiscal and calendar year sums are very close: This helps us in making estimates where calendar year data are lacking.

We were speaking of the importance within U.T.K. of "auxiliary enterprises" and of the Department of Residence Halls, in particular, in terms of direct income and outlay. Another gross measure which may prove enlightening is the percentage of total U.T.K. building floorage under immediate direction of these organizational units. One prominent study reported that as of October, 1970, 44.6 percent of total U.T.K. building floorage was in "auxiliary service" --- 2,783,325 square feet of 6,239,709 total.[4] This same source gave 31.5 percent of total floorage (1,962,859 square feet of 6,239,709 total) as residential room space, as of October, 1970.[5] Of course, included in the latter percentage would be residential space under the jurisdiction of the U.T.K. Office of Rental Properties, as well as under the U.T.K. Department of Residence Halls. According to an earlier study, as of Fall, 1967, the gross square footage of

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[4]Michael C. Ford and James R. Spillman, with Wiley E. Lynch, Physical Facilities Inventory and Space Utilization Study: A Report to the Chairman, Tennessee Higher Education Facilities Commission (Nashville, Tenn.: Tennessee State Higher Education Facilities Commission, May, 1971), p. 35. U.T.K. figures include the Knoxville Agricultural teaching units, the Tullahoma Space Institute, and on-half of the Memphis downtown center.

[5]Ibid., p. 27.

building floors at U.T.K. was 5,811,202, and the square footage of all "dormitory rooms" was 794,633, or 13.7 percent of the gross U.T.K. figure.[6]

Chart 1 shows the current internal organization of the U.T.K. Department of Residence Halls, and Table 12 indicates that during calendar year 1974 the Department employed an annual average of 427 persons of all types of job classification. It can be seen that the Summer Quarter figures lowered the averages, except for full-time employees (162), and, indeed, it is the general case in this report that annual averages are lowered by Summer Quarter figures --- enrollment, numbers of residence hall students, expenditures, revenues, jobs, personal income, etc.

The residence halls in which the U.T.K. Department of Residence Halls is currently involved are listed in Table 13, along with information on the year opened, resident capacity, whether coed, male, or female housing, square feet of floor space, and book value as of June 30, 1974. The Department is currently involved with 14 residence halls with a total capacity in 1974 of 8,012 residents, total floor space of 1,806,156 square feet, and having a total book value of $30,585,000 as of June 30, 1974 (and also as of June 30, 1976). Total resident capacity had increased to 8,070 by March, 1977.

Table 14 gives the numbers of students who were housed in Department-involved residence halls by academic quarter during calendar year 1974. The actual number housed each quarter ranged from a low of 1,275 during

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[6]Tennessee College Association for Higher Education, Tennessee Higher Education Physical Facilities Inventory Utilization Study (Nashville, Tenn.: Tennessee State Higher Education Facilities Commission, October 15, 1968), pp. 27, 73.

THE UNIVERSITY OF TENNESSEE
DEPARTMENT OF RESIDENCE HALLS

Chart 1.

EFFECTIVE: 7/1/76 VOID: N/A DISTRIBUTION: All	SUBJECT: Organizational Chart - Department of Residence Halls

Objective: To provide a graphic representation of the functional relationships of each of the individual staff positions in the Department of Residence Halls.

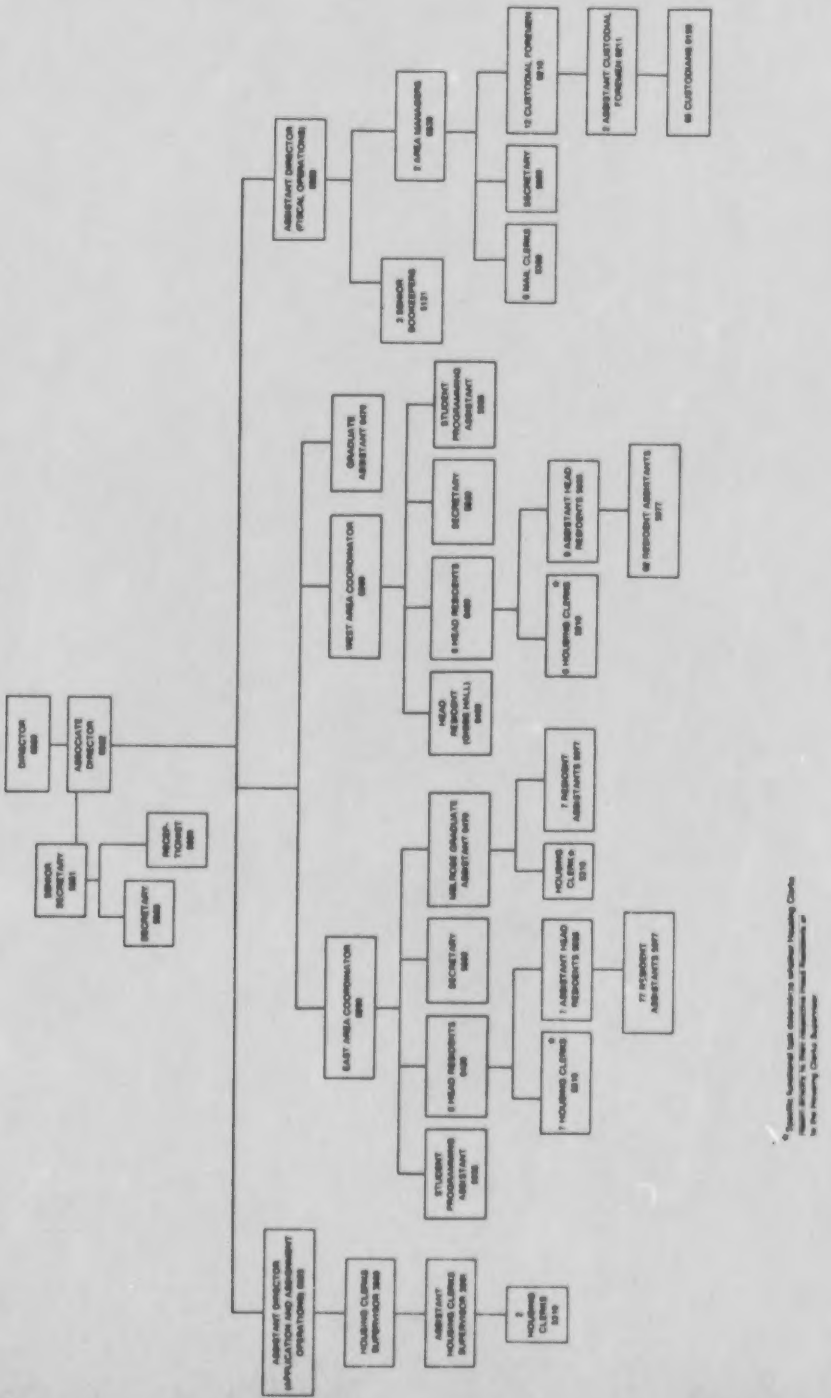


Table 12.

Department of Residence Halls
The University of Tennessee, Knoxville
Numbers of Employees By Type, Full Time,
Students Positioned, and Students Non-Positioned,
By Quarter, Calendar Year 1974

Quarter	Full Time	Students		Total
		Positioned	Non-Positioned	
Winter 1974	162	160	150	472
Spring 1974	162	160	150	472
Summer 1974	162	26	100	288
Fall 1974	162	160	150	472
Average Per Quarter	162	127	138	427

Note: Positioned students normally work 16-20 hours per week.
Non-positioned students normally work 5-40 hours per week.

SOURCE: Department of Residence Halls, The University of Tennessee, Knoxville, David Sharrar, Assistant Director, January, 1977.

Table 13.

The University of Tennessee, Knoxville
Residence Halls in which the Department of Residence Halls is Involved, and Selected Data Concerning Them, Calendar Year 1974

	Hall	Year Opened	Hall Resident Capacity	Type Housing	Square Feet of Floor Space	Book Value as of June 30, 1974 ($ Current)
1.	Melrose	1948	362	Coed	74,270	1,533,000
2.	Strong	1925	287	Female	62,957	1,405,000
3.	Clement	1965	713	Coed	157,218	2,603,000
4.	Greve	1956	391	Male	94,071	1,163,000
5.	Massey	1960	595	Female	130,442	1,749,000
6.	Dunford	1963	325	Female	82,748	1,290,000
7.	Hess	1961	1,041	Coed	210,717	3,161,000
8.	Morrill	1968	773	Coed	156,396	3,185,000
9.	Reese	1966	527	Male	106,674	2,016,000
10.	Humes	1966	527	Female	106,674	2,016,000
11.	North Carrick	1967	497	Male	119,593	2,329,000
12.	South Carrick	1967	533	Female	119,593	2,329,000
13.	Andy Holt	1970	1,190	Coed	334,785	4,740,000
14.	Gibbs	1962	251	Male	50,038	1,066,000
			8,012		1,806,156	30,585,000

Notes: Hall resident capacity had increased to 8,070 in March, 1977. Book value takes in the buildings only; does not include value of land or equipment. Unless there are major renovations, as there was of Strong Hall in 1970, the book value of a building remains essentially constant over a period of several years. For example, book value as of June 30, 1976, was the same as that of June 30, 1974, for each and for all the residence halls listed in the table above.

SOURCES: Department of Residence Halls, The University of Tennessee, Knoxville, Mr. Kenneth L. Stoner, Associate Director, January, 1977; and Mr. Robert Fling, Vice President for Business and Finance, The University of Tennessee, February, 1977.

Table 14.

The University of Tennessee, Knoxville
Numbers of Department of Residence Halls Residents
By Quarter, Calendar Year 1974

Quarter	Capacity	Number Housed	Occupancy Rate
Winter 1974	8,012	7,772	97 %
Spring 1974	8,012	7,531	94 %
Summer 1974	1,769	1,275	72 %
Fall 1974	8,012	8,012	100 %
Total		24,590	
Average Per Quarter		6,148	

SOURCE: Department of Residence Halls, The University of Tennessee, Knoxville, David Sharrar, Assistant Director, February, 1977.

Table 15.

The University of Tennessee, Knoxville
Numbers of Knoxville Area U.T.K. Students By Type of Housing,
Department of Residence Halls Housing and Otherwise,
Calendar Year 1974

Type of Housing	Average Number Housed Per Quarter	% of Total
Department of Residence Halls Housing	6,148	28.17
Otherwise (including U.T.K. married housing)	15,677	71.83
Total Knoxville Area U.T.K. Students	21,825	100.00

SOURCES: Tables 3 and 14.

Summer Quarter 1974 to a high of 8,012 (capacity) during Fall Quarter 1974. The average per quarter for calendar year 1974 was 6,148.

Table 15 shows that 28 percent of all Knoxville area U.T.K. students during calendar year 1974 were housed in Department-involved residence halls. Since at least 43 percent of all Knoxville area U.T.K. students originated from the Knoxville area (see Table 18), and since only about 7 percent of the students residing in Department-involved residence halls originated from the Knoxville area (see Table 19), at least 46 percent of all students originating from outside the area were housed in Department-involved residence halls during calendar year 1974. The Department-involved residence halls do not house married students, as already mentioned, and because the percentage of married students at U.T.K. has increased over the years, the overall percentage of "outside" students housed in Department-involved residence halls has decreased over the years. This is one of the reasons. "Off-campus" living has also increased somewhat.

A map of most of the core of the Knoxville campus is shown on a nearby page, with Department-involved residence halls indicated thereon.

It should be noted that at least 90 percent of the employees of the Department of Residence Halls work within and about the Department-involved halls and that they come into daily contact with the hall residents.

In studies of the overall economic impact of The University of Tennessee on the Knoxville area, the "off-campus" as well as the "on-campus" spendings of students have universally been considered as part of that

impact. No one seems to have questioned such a procedure. The rationale for such a procedure appears to be the notion that the students attend the University because it is what it is, and that if it were not what it is they would not be in the Knoxville area (particularly those attending the University from outside the area) and that neither would the money which they spend in the area. We have already stated our belief that students are at U.T.K. for "various and sundry" reasons. This is a matter which could be enlightened by some careful study, but which, unfortunately, can not be pursued in the present study in any real depth. One could just as well define University spending (and other economic activities) as part of the economic impact of students. Could we not, by the same type reasoning, say that the ("outside") students who reside in Department-involved residence halls, for whatever reason(s), are in fact in Knoxville, in those residence halls, and that their economic activities while residing in those residence halls can be ascribed to the Department? Notice, according to this type reasoning, that both "off-campus" and "on-campus" non-rental, Department-involved hall residents' spendings are fully derivative of "on-campus" rental spending by those same residents. We will make some economic impact estimates in this report based on this type reasoning. (Quotation marks are used around "on-campus" and "off-campus" because U.T.K. and Knoxville have become so intertwined over the years that it is not always clear where the campus ends and where the off-campus begins. Operationally, we mean on-campus if the money goes firstly through a U.T.K. organizational unit and off-campus if the money goes firstly through a non-U.T.K. organizational unit.)

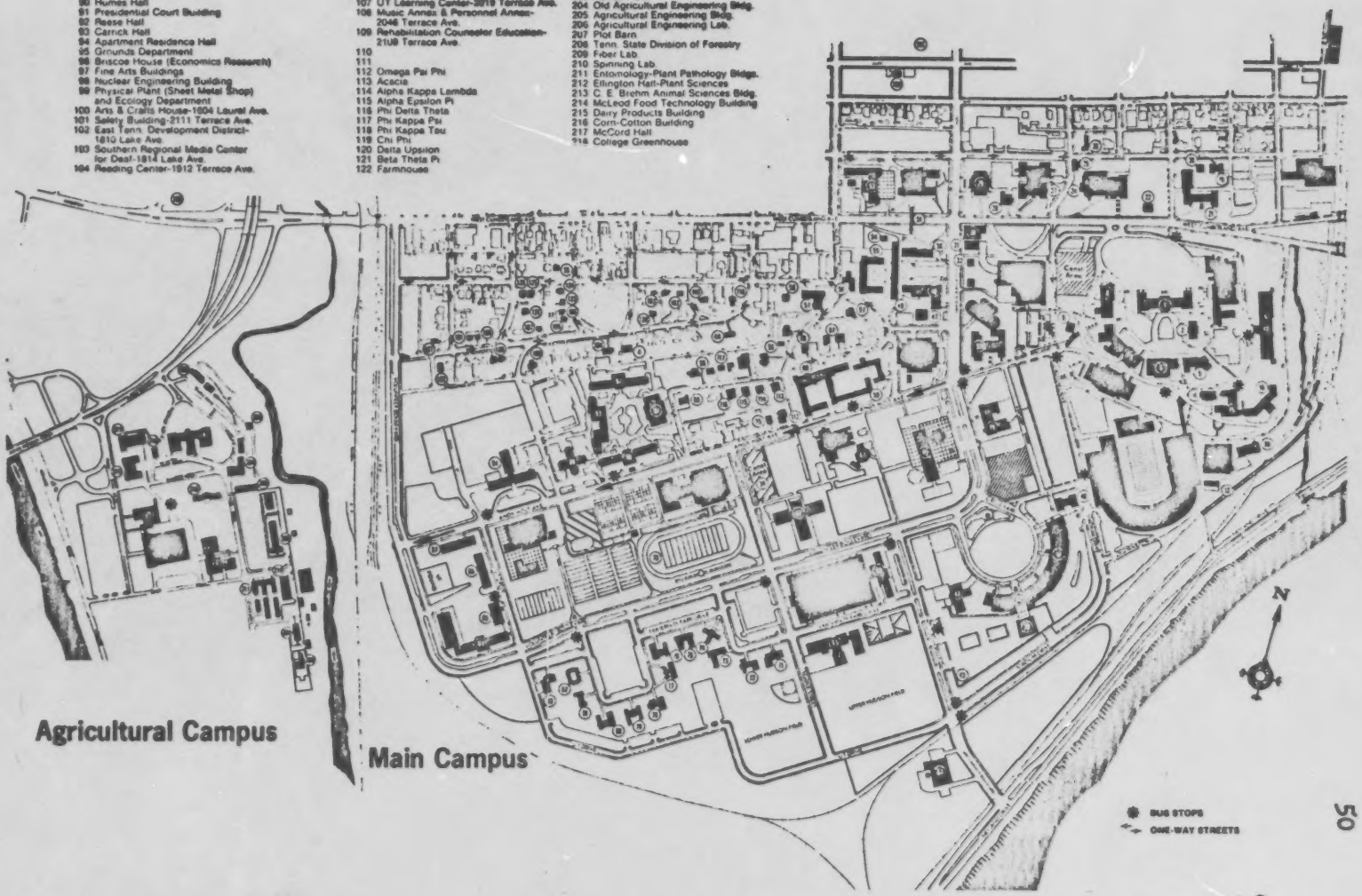
The University of Tennessee, Knoxville

MAIN CAMPUS:

1 Ayres Hall
2 South College
3 Dabney Hall & Buehler Hall
4 UTK Personnel Office
4A UTK Employment Office
5 Geology and Geography Bldg.
6 Physics Building
7 Hesler Biology Building
8 Austin Peay Bldg.
9 Turner House
10 Alumni Memorial Auditorium—Gymnasium
11 Neyland Stadium
12 Berry Hall
13 Estabrook Hall
14 Blount Hall
15 Perkins Hall
16 Ferris Hall
17 Dougherty Engineering Bldg.
18 White Avenue Building
19 Nursery School
20 Family Life Center
21 Harris Home Economics Bldg.
22 Psychological Service Center
23 Hoskins Library (Main Library)
24 Estes Kefauver Memorial Wing
25 Craft House
26 Planning School Annex
27 Taylor Law Center
28 Planning School
29 Panhellenic Building
30 Alumni Hall
31 Temple Court
32 Student Affairs Building
33 Carolyn P. Brown Memorial University Center
34 Student Clinic & Hospital
35 UT Credit Union
36 School of Social Work
37 Glocker Business Administration Building
38 Andrew Holt Tower
39 Claxton Education Building
40 Hearing and Speech Center
41 Communications and University Extension Building
42 Student Services and Administration Building
43 Andrew Holt Tower Parking Garage
44 McClung Museum
45 Humanities Complex/McClung Tower
46 John C. Hodges Undergraduate Library
47 Art Center
48 Dunford Hall
49 Greve Hall
50 Henson Hall
51 Pedestrian Overpass
52 Strong Hall-University Cafeteria
53 Clement Hall
54 Dean House
55 Massey Hall
56 Religious Center(s)
57 Kappa Sigma
58 History Annex
59 Melrose Hall
60 Hess Hall
61 Clarence Brown Presentation Theatre
62 Carousel Theatre
63 Gibbs Hall
64 Power Plant
65 Army Reserve Training Center
66 William B. Stokely Athletics Center
67 Music Building
68 University Architect's Office
69 Physical Education Building
70 Tom Black Track & Recreation Area
71 Phi Sigma Kappa
72 Kappa Alpha
73 Sigma Alpha Epsilon
74 Alpha Tau Omega
75 Sigma Chi
76 Pi Kappa Alpha
77 Sigma Nu
78 Pi Kappa Phi
79 Sigma Phi Epsilon
80 Phi Gamma Delta
81 Alpha Gamma Rho
82 Delta Tau Delta
83 Lambda Chi Alpha
84 Physical Plant
85 Motor Pool
86 Safety and Security
87 Purchasing Agent
88 Student Aquatic Center
89 Morrill Hall
90 Humes Hall
91 Presidential Court Building
92 Reese Hall
93 Carrick Hall
94 Apartment Residence Hall
95 Grounds Department
96 Briscoe House (Economics Research)
97 Fine Arts Buildings
98 Nuclear Engineering Building
99 Physical Plant (Sheet Metal Shop) and Ecology Department
100 Arts & Crafts House-1604 Laurel Ave.
101 Safety Building-2111 Terrace Ave.
102 East Tenn. Development District-1810 Lake Ave.
103 Southern Regional Media Center for Deaf-1814 Lake Ave.
104 Reading Center-1912 Terrace Ave.
105 Tennessee Research Coordination Unit-909 Mountcastle St.
106 Technical Assistance Center-907 Mountcastle St.
107 UT Learning Center-2619 Terrace Ave.
108 Music Annex & Personnel Annex-2046 Terrace Ave.
109 Rehabilitation Counselor Education-2108 Terrace Ave.
110
111
112 Omega Psi Phi
113 Acacia
114 Alpha Kappa Lambda
115 Alpha Epsilon Pi
116 Phi Delta Theta
117 Phi Kappa Psi
118 Phi Kappa Tau
119 Chi Phi
120 Delta Upsilon
121 Beta Theta Pi
122 Farmhouse

AGRICULTURAL CAMPUS:

201 Morgan Hall
202 Greenhouse
203 Power Plant
204 Old Agricultural Engineering Bldg.
205 Agricultural Engineering Bldg.
206 Agricultural Engineering Lab.
207 Plot Barn
208 Tenn. State Division of Forestry
209 Fiber Lab
210 Spinning Lab
211 Entomology-Plant Pathology Bldgs.
212 Ellington Hall-Plant Sciences
213 C. E. Brehm Animal Sciences Bldg.
214 McLeod Food Technology Building
215 Dairy Products Building
216 Corn-Cotton Building
217 McCord Hall
218 College Greenhouse



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THE ECONOMIC BASE TECHNIQUE

We have mentioned that the methodology of this impact report is founded fundamentally in economic base analysis. More discussion of this analytical technique is now proper, it seems. The economic base technique has found wide usage by regional and small-area analysts. Both the direct and indirect impacts on personal income and employment are estimated using this technique. The direct impact consists of those incomes and employments immediately associated with the activities of the U.T.K. Department of Residence Halls. Area income and employment multipliers are calculated and applied to estimate the indirect impact, on both income and employment, in those organizations which can be said to depend on incomes and employments immediately associated with the activities of the Department.

The concept of the economic base involves the distinction between those economic activities that are termed basic and those that are termed non-basic. Non-basic activities are assumed to be fully derivative of the basic activities. The fundamental step is to partition the subject area's personal income and employment into basic and non-basic sectors,

the validity of the approach depending heavily upon the accuracy of such partitioning. Basic income is defined as that immediately derived from origins outside the subject area, whether or not in return for current production activity; those activities providing the basic income are called basic activities and the people in such activities constitute what is called basic employment. Non-basic income is defined as that immediately derived from the local non-exporting component of the subject area and conceptually is fully dependent upon the respending of basic income; those activities providing the non-basic income are called non-basic activities and the people in such activities constitute what is called non-basic employment.

It should be recognized that what is basic in one subject area may be non-basic in another area. And it should also be noted that the amount of non-basic income (and employment) generated by a given amount of basic income (and employment) will depend on the volume of leakages from the subject area. Thus, for example, the greater the propensity to spend locally, the greater will be the non-basic income generated by a given volume of basic income. As has been pointed out quite often in recent years, the propensity to spend locally is generally a direct function of the total amount of activity in an area --- or, equivalently, the ratio of basic to non-basic activity is generally an inverse function of the total amount of activity in an area. Moreover, the longer the time period under consideration, supposedly the less clear it is what the actual chains of causation are. The conventional judgment is that economic base analysis has greater validity when studying smaller areas,

areas with less sophisticated interindustry linkages, and when the time horizon is shorter[1], although the latter judgment has been a matter of much controversy.

Note that according to the above framework, the extent to which any particular activity is a source of basic income and employment depends on the extent to which its income originates from outside the subject area.

Once the personal income and employment of a subject area have been allocated to the basic and non-basic sectors, personal income and employment multipliers can be calculated. Four different types of multipliers are used in this study, two static and two incremental types. The two static multipliers are, respectively:

$$k_1 = \frac{Y_T}{Y_B},$$

and

$$k_2 = \frac{Y_B}{N_{NB}},$$

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[1]See, for example, Steven J. Weiss and Edwin C. Gooding, "Estimation of Differential Employment Multipliers in a Small Regional Economy," Land Economics, vol. XLIV, no. 2 (May, 1968), pp. 235-237; Wilbur R. Thompson, "Internal and External Factors in the Development of Urban Economies," in Harvey S. Perloff and Lowdon Wingo, Jr., editors, Issues in Urban Economics (Baltimore, Maryland: The Johns Hopkins Press for Resources for the Future, Inc., 1968), pp. 43-46; "The Legacy of the Export Base Theory"; Alex Kerr and Robert B. Williamson, "Regional Economics in the U. S.: A Review Essay," Growth and Change, A Journal of Regional Development, vol. 1, no. 1 (January, 1970), pp. 8-10; and, also, see Charles B. Garrison, "The Impact of New Industry: An Application of the Economic Base Multiplier to Small Rural Areas," Land Economics, vol. XLVIII, no. 4 (November, 1972), pp. 332, 336-337. A general assessment concerning the short-run applicableness of economic base analysis is found in Horst Siebert, Regional Economic Growth: Theory and Policy (Scranton, Pennsylvania: International Textbook Company, 1969), pp. 94-98.

where Y_T = total personal income at some fixed point in time,

Y_B = basic personal income at some fixed point in time,

N_{NB} = non-basic employment at some fixed point in time.

The two incremental multipliers are, respectively:

$$k_3 = \frac{\Delta Y_T}{\Delta Y_B} ,$$

$$k_4 = \frac{\Delta Y_B}{\Delta N_{NB}} ,$$

where Δ represents a change in the magnitude of the relevant variable over a given time period.

The applicability of the above multipliers (once calculated on historic data) at any particular point in the future or for any particular period in the future, depends on the year-to-year or period-to-period stability of such multipliers.

Multipliers k_1 and k_3 can be easily recognized, once denoted, as income multipliers. Given basic income or a change in basic income, total income or a change in total income can be determined. The higher either k_1 or k_3, the greater the multiplier effect.

Multipliers k_2 and k_4 will be denoted here as employment multipliers, though they are actually hybrids of income and employment. Ratio k_2 can be interpreted as the amount of basic income "required" to support one non-basic job. Ratio k_4 can be interpreted as the amount of change in basic income that is "required" to bring about a one unit change in the number of non-basic jobs. The lower either k_2 or k_4, the greater the multiplier effect.

As stated above, the fundamental task in applying the economic base technique is to allocate activity into its basic and non-basic aspects. The more refined this procedure, presumably the more accurate the estimates based upon the resulting allocation. It can be accomplished for the subject area as a whole and for individual activities within the area. The task is not a brief one if much refinement is sought. The subject area of the present study is the three-county Knoxville, Tennessee, area. Fortunately, total economic activity in this area was allocated to broad basic and non-basic sectors as recently as 1974 by Professor Charles B. Garrison of The University of Tennessee in Knoxville.[2] Dr. Garrison employed a combination of two prominent allocation methods: the location quotient method, and the direct survey method. He found that except for manufacturing and mining, and to a lesser extent the finance group, the location quotient and direct survey methods tended to agree as to the percent of employment and income which should be considered basic or "export."[3] Futhermore, he found that Knoxville area income multipliers showed great stability over the period 1959-1970, the 1970 differing by only three percent from the 1959.[4] The present study will adopt Dr. Garrison's recent results for the Knoxville area as a whole but will derive individual measures for those activities associated with the U.T.K. Department of Residence Halls and with U.T.K. overall.

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[2]Charles B. Garrison, Projections of the Knoxville Economy to 1980 and 1990, Prepared for Greater Knoxville Chamber of Commerce (Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, May, 1974), pp. 3-12.

[3]Ibid., p. 6.

[4]Ibid., p. 17n.

Table 16 shows the calculation of our Knoxville area aggregate income and employment multipliers. Our personal income multiplier ($\Delta Y_T / \Delta Y_B$) has a value of 1.99. This is the Garrison multiplier for 1970 and we have assumed it to remain stable through 1974. Our employment multiplier ($\Delta Y_B / \Delta N_{NB}$) is $14,657, in 1974 dollars. We have less confidence in the employment multiplier, but it appears to be a conservative number, at least, and this we want. These two multipliers are used several times in the following personal income and employment impact estimates.

DEPARTMENT SPENDING

We have given in an earlier section recent historic data regarding the income and outlay of the U.T.K. Department of Residence Halls. (See Tables 9, 10, and 11.) It was pointed out there that the Department *per se* accounted directly for approximately 6 percent of both the income and outlay of U.T.K. during fiscal year 1974. Together, the Department of Residence Halls, the Food Services Department, the Bookstore, and the Parking Authority accounted directly for over 15 percent of both the income and outlay of U.T.K. during that same period. It was also pointed out that these organizations were self-supporting in the sense that the outlay of each was paid out of income generated by the sales of goods and services by each. We will concern ourselves just here with the Department of Residence Halls' revenues and outlays, and our period will be calendar year 1974, as discussed earlier. We will come back to the three other U.T.K. organizations mentioned above a bit later.

Table 17 shows the Department's calendar year 1974 revenues and outlays. Notice that 92 percent of the Department's total revenues was provided by room rental charges paid by student residents of Department-involved residence halls. Other sales to regular student residents pro-

Table 16.
Calculation of Multipliers for Personal Income and Employment, Three-County Knoxville Area, 1970-1974
(Calendar Years)

	1970	1974	Δ(1970-74)
Total Personal Income (Y_T) (1972 $1000)	1,494,477	1,769,144	274,667
Basic Personal Income (Y_B) (1972 $1000)	750,227	888,110	137,883
Y_T / Y_B	1.99	1.99	-
Total Employment (N_T)	170,709	192,734	22,025
Non-Basic Employment (N_{NB})	85,013	95,982	10,969
Y_B / N_{NB} (1972 $)	8,825	9,253	-
$\Delta Y_T / \Delta Y_B$			1.99
$\Delta Y_B / \Delta N_{NB}$ (1972 $)			12,570
$\Delta Y_B / \Delta N_{NB}$ (1974 $)			14,657

Notes: Personal income and employment are given here for the Knoxville area as a place of work, or the Knoxville area extended (see Tables 7 and 8). Dr. Garrison in his 1974 study used the same procedure (see the SOURCES). The deflator used here is the implicit price deflator for personal consumption expenditures, base 1972 = 100.

SOURCES: U. S. Department of Commerce Bureau of Economic Analysis, Regional Economics Information System, data printout, May, 1976, for personal income and employment; Charles B. Garrison, Projections of the Knoxville Economy to 1980 and 1990 (Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, May, 1974), pp. 3-8, 17n, for the basic and non-basic allocations; and Economic Report of the President, Transmitted to Congress January 1976; Together With the Annual Report of the Council of Economic Advisers (Washington, D.C.: U. S. Government Printing Office, 1976), p. 174, for the implicit price deflators for personal consumption expenditures.

Table 17.

Department of Residence Halls
The University of Tennessee, Knoxville
Financial Statement, Calendar Year 1974
(Current Dollars)

	1974	Percent of Total Revenue	Approximate Percent Spent Locally
REVENUES			
Student Rentals	4,255,382.87	92.1	
Forfeited Deposits	42,826.00	0.9	
Special Groups	143,647.32	3.1	
Vending Commissions	49,498.36	1.1	
Laundry Commissions	0.93		
Refrigerator Rental	3,309.50	0.1	
Washer/Dryer Revenue	104,950.39	2.3	
Other	18,913.83	0.4	
TOTAL REVENUES	4,618,529.20	100.0	
EXPENDITURES			
Salaries (P)	506,978.72	11.0	100
Custodian Wages (P)	511,839.43	11.1	100
Student Wages* (P)	109,395.82	2.4	100
Employee Meals (Td)	4,324.27	0.1	100
Staff Benefits (P)	75,057.27	1.6	7
Supplies and Printing (Td)	121,375.48	2.6	65
Laundry (S)	12,571.79	0.3	100
Maintenance and Repairs (S)	379,056.87	8.2	100
Utilities (T,C,& PU)	613,300.57	13.3	100
Equipment (Td)	43,421.30	0.9	81
Telephone (T,C,& PU)	281,205.44	6.1	100
Insurance (F,I,& RE)	11,482.78	0.2	0
Rental (Rt)	4,662.50	0.1	100
Miscellaneous (Td)	2.65		100
TOTAL EXPENDITURES	2,674,674.89	57.9	95
OPERATING GAIN (LOSS)	1,943,854.31	42.1	
LESS: Administrative Charge	213,705.78	4.6	
Debt Service	1,632,681.86	35.4	
SUB TOTAL	1,846,387.64	40.0	
NET GAIN (LOSS)	97,466.67	2.1	

*The first half of calendar year 1974, "student wages" were not paid in money. During fiscal year 1976, "student wages" were 3.6% of total Department revenues.

SOURCES: Department of Residence Halls, The University of Tennessee, Knoxville, Statements of Operations, December, 1973, June, 1974, and December, 1974; and David Sharrar, Assistant Director, Jan., 1977.

vided 5 percent of total Department revenues, and the remaining 3 percent came from room rental charges paid by certain visitors to U.T.K. (special groups, conferees, etc.). As for outlays, it can be seen that 26 percent of the revenues collected went for payroll (P) expenses, 32 percent went for other purchases, 40 percent was taken up by debt service and an administrative charge, and 2 percent was left over (net gain).

Successful application of the economic base technique requires that one know where a particular organization's income is coming from, and where its outlay is going, geographically. Table 17 indicates the percent of each expenditure which was spent locally, that is, in the Knoxville area. Overall, approximately 95 percent of the Department's expenditures was spent locally, according to the table. What about Department revenues? Well, Table 18 indicates that at most 57 percent of all Knoxville area U.T.K. students originated from outside the Knoxville area during the Fall Quarter of 1971. We assume that this percentage was approximately the same during 1974. But not all Knoxville area U.T.K. students originating from outside the Knoxville area resided in Department-involved residence halls. We are concerned at present only with those students who resided in Department-involved residence halls and, thus, paid rental and related sums to the Department. Table 19 indicates that a whopping 93 percent of the students who resided in Department-involved residence halls originated from outside the Knoxville area'. Though somewhat of a strict assumption, we assume here that 100 percent of the money spent by those same students while in Knoxville originated from outside the area. This assumption would hold true for a "goodly portion"

Table 18.

The University of Tennessee, Knoxville
Numbers of Students By Place of Geographical Origin,
Knoxville Area, East Tennessee, Middle Tennessee,
West Tennessee, Tennessee, Other U.S.A. States, and
Other Countries, Fall, 1971

Place of Origin	Number of Students	% of Total
Knox County, Tenn.	8,792	32.49
Anderson County, Tenn.	1,674	6.19
Blount County, Tenn.	1,204	4.45
Knoxville Area	11,670	43.13
Rest of East Tennessee	5,266	19.46
East Tennessee	16,936	62.59
East Tennessee (34 counties)	16,936	62.59
Middle Tennessee (40 counties)	3,051	11.28
West Tennessee (21 counties)	2,599	9.61
Tennessee	22,586	83.48
Tennessee	22,586	83.48
Other U.S.A. States	3,995	14.77
Other Countries	474	1.75
TOTAL	27,055	100.00

SOURCE: Carolyn P. Wolfcale, 1971-1972 Statistical Summary, The University of Tennessee (Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, 1972), pp. 14-27. Includes certain Memphis, Nashville, Tullahoma, Chattanooga, and Kingsport enrollments (about 1,879), as well as Knoxville and Oak Ridge (25,176).

Table 19.

The University of Tennessee, Knoxville
Numbers of Department of Residence Halls Residents
By Place of Geographical Origin, Knoxville Area,
Other Areas of Tennessee, and Other Than Tennessee; and
Calculation of Year-Round Equivalent Number of Department Residents,
Calendar Year 1974

Place of Origin	Average Number Housed Per Quarter		% of Total	
Knoxville Area' (Non-Basic)	428		6.96	
Other Areas of Tennessee (Basic)	4,515	5,720	73.44	93.04
Other Than Tennessee (Basic)	1,205		19.60	
Total Number of Department Residents	6,148		100.00	

Number of Department Residents Originating from Other Than the Knoxville Area' = (4,515) + (1,205) = 5,720

Percent of Department Residents Originating from Other Than the Knoxville Area' = [(5,720) / (6,148)][100] = 93.04

Length of Stay of Department Residents in the Halls Per Year: 10 months

Year-Round Equivalent Number of Department Residents =
[(6,148) x (10) + (428) x (2)] / (12) = 5,195

Year-Round Equivalent Number of Basic Department Residents =
[(5,720) x (10) + (0) x (2)] / (12) = 4,767

Note: "Knoxville Area'" is the area within a twenty mile radius of Knoxville.

SOURCE: Department of Residence Halls, The University of Tennessee, Knoxville, Kenneth L. Stoner, Associate Director, March, 1977.

of those students but certainly not for all. By this line of reasoning, we conclude that approximately 93 percent of the revenues and expenditures of the Department originated from outside the Knoxville area, that is, were basic (assume 93 percent of the U.T.K.-housed visitors were also from outside the area).

Many impact studies have included the argument that students who originate from the subject area ought to be included as basic. In the present case, the argument would undoubtedly take the angle that if the school did not offer housing, prospective residence hall students would leave the area and attend schools elsewhere, carrying with them their and their parents' money. This would likely be true to a certain extent, but the degree to which it would be true needs to be investigated even if so extreme an assumption is made. But, regardless, so long as the money which a student spends locally, originates locally, it is non-basic by the rules of the economic base technique. We have taken a conservative route here, we believe.

Table 20 presents the payroll and purchases impact calculations for the Department per se. The Department expenditure data of Table 17 has been regrouped into five broad catagories (notice the symbols in parenthesis in the two tables) and payroll factors have been applied to arrive at direct local income. A payroll factor is a payroll-to-sales ratio for any particular industrial grouping. The payroll factors applied in the table are derived from two sources and are area-specific, that is, they

Table 20.

Department of Residence Halls,
The University of Tennessee, Knoxville
Payroll and Purchases Impact Calculations, Calendar Year 1974
($ Current)

	Outlay	Outlay Locally	Percent Outlay Locally	Payroll Factor	Direct Local Income
Payroll	1,203,271	1,133,468	94.2	1.000	1,133,468
Purchases					
Trade (Td)	169,124	118,342		0.117	13,846
Services (S)	391,629	391,629		0.303	118,664
Finance, Insurance, and Real Estate (F,I,& RE)	11,483	0		0.500	0
Transportation, Communication and Public Utilities (T,C, & PU)	894,506	894,506		0.500	447,253
Rent (Rt)	4,662	4,662		1.000	4,662
Total Purchases	1,471,404	1,409,139	95.8		584,425
TOTAL	2,674,675	2,542,607	95.1		1,717,893

		Payroll	Purchases	Total
(1)	Direct Local Income:	$1,133,468	$584,425	$1,717,893
(2)	Personal Income Factor:	0.94	0.94	0.94
(3)	Direct Personal Income [(1) x (2)]:	$1,065,460	$549,360	$1,614,819
(4)	Proportion Basic [Table 19]:	0.93	0.93	0.93
(5)	Basic Direct Personal Income [(3)x(4)]:	$990,878	$510,905	$1,501,782
(6)	Personal Income Multiplier [Table 16]:			1.99
(7)	Employment Multiplier [Table 16]:			$14,657
(8)	Knoxville Area PN-FPI / E [Table 21]:		$8,311	

Personal Income Impact:

Direct = = $1,501,782
Indirect = (Total minus Direct) = $1,486,764
Total = (1.99) x ($1,501,782) = $2,988,546

Employment Impact:

Direct = (427)* x ($510,905/$8,311) = 488
Indirect = ($1,501,782) / ($14,657) = 102
Total = (Direct plus Indirect) = 590

*162 full-time.

Table 21.

Private Non-Farm (PN-F) Labor and Proprietors Income (L&PI) and Employment, and Average Income Per Employed Person, Three-County Knoxville Area, Calendar Year 1974 ($ Current)

	Income (PN-FL&PI)	Employment (E)	Average Income Per Employed Person (PN-FL&PI/E)
Knox County, Tenn.	889,738,000	110,106	8,081
Anderson County, Tenn.	287,467,000	24,806	11,589
Blount County, Tenn.	172,149,000	17,721	9,714
Knoxville Area	1,349,354,000	152,633	8,841

Average Private Non-Farm Personal Income Per Employed Person (PN-FPI/E) =

= (PN-FL&PI / E) x (0.94)

THUS: Knoxville Area PN-FPI / E = ($8,841) x (0.94) = $8,311.

SOURCE: U. S. Department of Commerce Bureau of Economic Analysis, Regional Economics Information System, data printout, May, 1976.

have been determined for the Knoxville area.[1] After arriving at direct local income, the personal income factor (0.94) is applied to obtain direct personal income. The personal income factor is the proportion of direct local income which was personal income; its value is based on data from one source.[2] (About 6 percent of direct local income went to the government as contributions to social insurance.) Not all of direct personal income was basic, as discussed above: only 0.93 is considered basic in our case. Applying this factor (0.93), we arrive at the basic direct personal income attributable to the payroll and purchases of the Department per se. For the payroll, it was $990,878; for purchases it was $510,905; for a total of $1,501,782, in 1974 dollars. When our Knoxville area personal income multiplier is finally employed (1.99), we find that the direct and indirect local personal income attributable to Department expenditures per se was $2,988,546. From Table 12 we know that the Department employed an annual average of 427 persons in calendar year 1974. Through its purchases, it provided direct full-time employment for approximately 61 other persons in local supply organizations. In addition, these 488 persons through the respending of the $1,501,782 in basic direct personal income, indirectly provided full-time employment for an additional

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[1]Source one is the U. S. Bureau of the Census, 1972 Census of Retail Trade, Volume II: Area Statistics, Part 3: North Dakata-Wyoming (Washington, D.C.: U. S. Government Printing Office, May, 1976), pp. 43-11 and 43-12; 1972 Census of Wholesale Trade, Area Statistics: Tennessee (Washington, D.C., October, 1974), p. 43-9; 1972 Census of Selected Service Industries, Volume II: Area Statistics, Part 3: North Dakota-Wyoming (Washington, D.C., May, 1976), pp. 43-11 and 43-12. Source two is Charles B. Garrison, Projections of the Knoxville Economy to 1980 and 1990 (Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, May, 1974), pp. 7, 11.

[2]U. S. Department of Commerce Bureau of Economic Analysis, Regional Economics Information System, data printout, May, 1976.

102 persons. Thus, the jobs of 590 persons in the Knoxville area were directly and indirectly attributable to Department expenditures *per se*. According to the economic base technique.

And, now, to go from the approximate *per se* to the more approximate subtle.

DEPARTMENT-INVOLVED RESIDENTS' OFF-CAMPUS SPENDING

The regular student residents of halls in which the U.T.K. Department of Residence Halls is involved spend money on-campus and off-campus. We have discussed this in an earlier section. Off-campus spending is our specific topic here (though necessarily, but parenthetically, on-campus spending as well). Off-campus spending by residence hall students is presumably 99.9 percent non-rental (non-room rental). There have been some related studies.

A 1962 study of U.T.K. undergraduate married couples having no children or other dependents estimated this group's average monthly non-rental expenditures at $216 during 1961-1962.[1] Expressed in 1974 dollars, this would be approximately $352 per month per couple, or $3,168 per nine months per couple.[2]

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[1] Evva Jean Price Peters, "Income, Expenditures, and Financial Decision-Making Practices of Selected, Undergraduate Married Couples at the University of Tennessee, Fall and Winter Quarters, 1961-1962," M.S. thesis (Home Management), The University of Tennessee, Knoxville, Tennessee, August, 1962, p. 24.

[2] By way of the consumer price index. See Economic Report of the President, Transmitted to the Congress January 1976; Together With the Annual Report of the Council of Economic Advisors (Washington, D.C.: U. S. Government Printing Office, 1976), p. 220.

According to the Greater Knoxville Chamber of Commerce, resident students at U.T.K. in Knoxville spent approximately $1,000 each in 1966 (excluding Summer Quarter) in off-campus non-rental purchases.[3] Expressed in 1974 dollars, this would be approximately $1,520 each.[4] (The number of "resident students" in 1966 was given as 18,000 by the Chamber, and, thus, $18,000,000 was calculated as the total amount spent. The Chamber based part of its calculation of U.T.K.'s area economic impact on the assumption that each $10,000 spent in sales creates one(1) job. This source, we note, gave U.T.K.'s 1966 payroll as $28,484,000; its purchases as $10,000,000; and its construction expenses as $15,000,000. The number of faculty and staff members was given as 6,960.)[5]

Another study of student expenditures during Fall Quarter, 1967, estimated $1,527 as the average spent by each student per three-quarter academic year for all expenses except those for tuition, residence hall rent, and textbooks. A sample survey was taken which represented the overall U.T.K. proportions of married to single, male to female, and

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[3]"U-T Giant Contributor to Local Economy," Greater Knoxville (Knoxville, Tenn.: Greater Knoxville Chamber of Commerce), vol. 9, no. 6 (September, 1967), p. 12. This article appears to have been based on Clenton James Smith's "The Economic Impact of The University of Tennessee Upon Metropolitan Knoxville," M.S. thesis (Geography), The University of Tennessee, Knoxville, Tennessee, August, 1964, especially pp. 43-45.

[4]See footnote 2 immediately above.

[5]"U-T Giant Contributor to Local Economy," op. cit.

graduate to undergraduate.[6] Expressed in 1974 dollars, this would amount to approximately $2,255.[7]

Referring to Table 22, we see that $3,007 has been recently estimated as the fiscal-1974 value of U.T.K. off-campus non-rental expenditures per year-round equivalent student. This value appears rather high.[8] Of course, a student living in the residence halls on campus and/or eating in U.T.K. dining facilities and/or spending money in the U.T.K. bookstore, etc., would normally be expected to spend only a portion of this amount off-campus in a full year's time.

It should be noted here that by "year-round equivalent student," we mean a student who is around Knoxville all year, not the "full-time equivalent student" on the basis of credit-hours of courses taken in school. Nor do we mean the "full-year" student who enrolls for at least one academic course each quarter of the year. A particular warm-blooded student could, of course, be all three. We have assumed in our calculation of the number of year-round equivalent students (Table 23) that those average full-year students who originate from outside the Knoxville area remain

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[6]Vincent R. DeCarlo, "The Net Direct Economic Effect of The University of Tennessee on the City of Knoxville and on Knox County Resulting from the Expansion of the Knoxville Campus Since 1962," M.S. thesis (Finance), The University of Tennessee, Knoxville, Tennessee, March, 1969, p. 52.

[7]See footnote 2 immediately above.

[8]Our calculated value for the number of fiscal 1974 year-round equivalent students could, quite possibly, be significantly different from that calculated by the source of the estimate of total fiscal 1974 off-campus non-rental expenditures of Knoxville area U.T.K. students. Such might account partially for the seemingly high per student estimate.

Table 22.

Total Off-Campus Non-Rental Expenditures
of Knoxville Area U.T.K. Students,
Fiscal Year 1974
($ Current)

Type of Expenditure	Amount	% of Total	Number of Year-Round Equivalent Students	Amount Per Year-Round Equivalent Student
Retail	37,273,098	64	19,368	1,924
Services	10,483,058	18	19,368	541
Finance, Insurance, and Real Estate	4,659,137	8	19,368	241
Transportation and Utilities	5,823,922	10	19,368	301
	58,239,215	100	19,368	3,007

SOURCES: For the total amount of expenditures, $58,239,215, our source is John R. Moore and Craig G. Ericksen, The Direct and Indirect Economic Impact on the Knoxville Area of Units of The University of Tennessee Located at Knoxville, 1973-1974 (Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, January 15, 1976), p. 5. For the amount of expenditure by type, we have relied on the percentage breakdown given in Charles B. Garrison, Projections of the Knoxville Economy to 1980 and 1990 (Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, May, 1974), pp. 7, 11. The number of Knoxville area U.T.K. year-round equivalent students is based on enrollment summaries furnished by the Office of Institutional Research, The University of Tennessee, Knoxville, Tennessee, Sally Williams, Data Analyst, February, 1977. See Table 23.

Table 23.

U.T.K Knoxville Area Year-Round Equivalent Students (Y-RES) Calculations

School Quarter	Knoxville Area U.T.K. Enrollment
Summer 1973	12,349
Fall 1973	25,651
Winter 1974	24,342
Spring 1974	23,263
Fiscal 1974 Average Per Quarter	21,401
Winter 1974	24,342
Spring 1974	23,263
Summer 1974	12,505
Fall 1974	27,190
Calendar 1974 Average Per Quarter	21,825

Percentage of U.T.K. Students Originating from the Knoxville Area = [Table 18] = 43

Length of Stay in Knoxville Area of Full-Year Students Originating from Outside the Knoxville Area, Per Year = 10 months

Length of Stay in Knoxville Area of Full-Year Students Originating from the Knoxville Area, Per Year = 12 months

Fiscal 1974 Y-RES = [(21,401) x (10) + (21,401) x (0.43) x (2)] / (12)
= 19,368

Calendar 1974 Y-RES = [(21,825) x (10) + (21,825) x (0.43) x (2)] / (12)
= 19,772

Calendar 1974 Basic Y-RES = [(21,825) x (0.57) x (10)] / (12)
= 10,367

SOURCES: Tables 3 and 18.

in the Knoxville area for only 10 months, that is, that they attend classes year-round but during the quarter breaks they are found outside the area. It has also been assumed that all students who are listed as enrolled for each quarter are actually enrolled for the entire quarter and/or are actually in the Knoxville area the full quarter. Both these assumptions are "strict" and will have to be modified by survey data if more accurate estimates are forthcoming. However, note that they offset each other to a certain extent, and, of course, to that extent they improve the broad estimates here given. During calendar year 1974, the number of Knoxville area U.T.K. full-year students was 21,825; the number of year-round equivalent students was 19,772; and the number of basic year-round equivalent students was approximately 10,367 (Table 23). The number of year-round equivalent Department-involved students was 5,195 during calendar year 1974, and the number of year-round equivalent basic Department-involved student residents was approximately 4,767 (Table 19).

The only study found by this researcher which deals in detail specifically with the spending habits of U.T.K. unmarried residence hall students is a Master of Science thesis in Marketing, completed in 1961 by Peter Condiles at The University of Tennessee in Knoxville.[9] Mr. Condiles' study dealt with the Fall-Winter-Spring academic year 1959-1960. It excluded only residence hall students on athletic scholarships and graduate students. The spending items covered in the study were: food, clothing, tuition, rent, entertainment, textbooks and supplies, personal grooming,

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[9]Peter Condiles, "An Analysis of the Spending Habits of Residence Hall Students at The University of Tennessee, 1959-60," M.S. thesis (Marketing), The University of Tennessee, Knoxville, Tennessee, December, 1961.

and laundry and dry cleaning. The category "entertainment" included: sports entertainment, movies, magazines, all books other than textbooks, beverages, fraternity or sorority functions, and phonograph records. The category "personal grooming" included: toothpaste, soap, cosmetics, haircuts, and "etc." The spending items were meant to be nearly exhaustive insofar as U.T.K. unmarried, undergraduate, residence hall students of 1959-60 were concerned. Part of transportation expenses were supposed to be included in entertainment, apparently.[10] Notably absent were travel expenses, medical and dental care expenses, and time purchases such as typewriters, radios, and phonographs. Also absent were finance and insurance expenses, among others.

Table 24 exhibits Mr. Condiles' results, exclusive of tuition and rent expenditures, in the first column. In the other columns of the table, the results of 1959-60 have been stated in 1974 dollars, by use of the consumer price indexes for various expenditure classes. Mr. Condiles' results were on a per month basis and this makes it convenient to translate them into a multi-month basis, as we have done in the table. In the bottom part of the table, seven different expenditure sums are given, corresponding, say, to seven different types of residence hall spenders. Type I spends all their money which goes for the listed items, off-campus. Type II does all their laundry and dry cleaning on-campus, but spends the remainder of their money going for the listed items, off-campus. And so on.

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[10]Condiles, op. cit., pp. 34, 36.

Table 24.

Selected Expenditures of Department of Residence Halls Residents
The University of Tennessee, Knoxville
($ Current)

	Average Spent Per Student				
	Per Month		Per 8.5 Mos.	Per 10 Mos.	Per 12 Mos.
Type	1959-1960	1974	1974	1974	1974
Food (F)	58.09	106.74	907.29	1,067.40	1,280.88
Clothing (C)	29.38	44.66	379.61	446.60	535.92
Entertainment (E)	19.02	29.15	247.78	291.50	349.80
Textbooks and Supplies (TS)	10.00	15.33	130.31	153.30	183.96
Personal Grooming (P)	7.47	11.38	96.73	113.80	136.56
Laundry and Dry Cleaning (L)	5.35	8.36	71.06	83.60	100.32
I. Sum	129.31	215.62	1,832.77	2,156.20	2,587.44
II. Sum -(L)	123.96	207.26	1,761.71	2,072.60	2,487.12
III. Sum -(L)-(P)	116.49	195.88	1,664.98	1,958.80	2,350.56
IV. Sum -(L)-(P)-(TS)	106.49	180.55	1,534.67	1,805.50	2,166.60
V. Sum -(L)-(P)-(TS)-(F)	48.40	73.81	627.38	738.10	885.72
VI. Sum - L-P-TS-F-C	19.02	29.15	247.77	291.50	349.80
VII. Sum - L-P-TS-F-C-E	0	0	0	0	0

SOURCES: Peter Condiles, "An Analysis of the Spending Habits of Residence Hall Students at The University of Tennessee, 1959-60," M.S. thesis (Marketing), The University of Tennessee, Knoxville, Tennessee, December, 1961, pp. 19-20, 53-57, 108; and Economic Report of the President, Transmitted to Congress January 1976, Together With the Annual Report of the Council of Economic Advisors (Washington, D.C.: U. S. Government Printing Office, 1976), p. 220.

Expenditure patterns of U.T.K. unmarried residence hall students have, no doubt, changed since 1959-60; but in the absence of any known, recent, well-conducted scientific survey (a major project in itself), we will base first estimates of Department-involved residents' off-campus spending on the Condile results. All estimates of such spending should, of course, take into consideration the different living habits of on-campus and off-campus students, which, along with other socio-economic factors, need to be studied more carefully for more accurate estimates.

If we take expenditure type IV to represent the off-campus spending of the average room-only Department-involved resident, and sum V to represent the off-campus spending of the average room-and-board Department-involved resident, we see (Table 24 still) that the year-round equivalent Department resident would have spent $2,167 off-campus in calendar 1974 if a room-only resident and $886 off-campus if a room-and-board resident. Of course, there are residence hall students who spend practically nothing off-campus in the Knoxville area, and then there are those who spend hugh amounts off-campus locally. Considerable study needs to be done in this area, for, admittedly, secondary and outdated sources have been relied upon unduly, and the methodology can certainly be refined. Remember, in any case, that these first estimates are for our year-round equivalent Department resident as defined above.

To calculate the impact of Department-involved residents' off-campus spending, we need, in addition to what we have discussed above, the numbers of Department residents eating on-campus and off-campus. In calendar year

Table 25.

The University of Tennessee, Knoxville
Numbers of Department of Residence Halls Residents
On U.T.K. Food Services Department Eating Plans,
By Quarter, Calendar Year 1974

	Meal Plan I*	Meal Plan II**	Dining Club "Plan" (Full-Time)***	All Three Plans
Winter 1974	3,450	1,394	450	5,294
Spring 1974	3,330	1,296	450	5,076
Summer 1974****	567	n.ap.	75	642
Fall 1974	3,520	1,536	450	5,506
Total	10,867	4,226	1,425	16,518
Average Per Quarter	2,717	1,057	356	4,130

Percent of Department of Residence Halls Residents [Table 19] on An Eating Plan = [(4,130) / (6,148)][100] = 67.18

Year-Round Equivalent Number of Department of Residence Halls Residents on An Eating Plan = [(4,130) x (10) + (4,130) x (0.07) x (2)] / (12) = 3,490

Year-Round Equivalent Number of Department of Residence Halls Residents (total) [Table 19] = 5,195

Year-Round Equivalent Number of Department of Residence Halls Residents on No (U.T.K.) Eating Plan = (5,195) - (3,490) = 1,705

Year-Round Equivalent Number of Basic Department of Residence Halls Residents on An Eating Plan = [(4,130) x (0.93) x (10)] / (12) = 3,201

Year-Round Equivalent Number of Basic Department of Residence Halls Residents (total) [Table 19] = 4,767

Year-Round Equivalent Number of Basic Department of Residence Halls Residents on No (U.T.K.) Eating Plan = (4,767) - (3,201) = 1,566

*15 meals per week.

**20 meals per week.

***Numbers are based on the first estimate that 50% of 1,800 Dining Club members were Department residents and that 25% of these were full-time, i.e., ate all or nearly all their regular meals this way.

****Contract meals were only available at Presidential Complex.

n.ap. = not applicable

SOURCE: Food Services Department, The University of Tennessee, Knoxville; Mr. Dan Wilson, Accounting Manager, March, 1977.

1974, approximately 42 percent (= about 3,370) of the Department-involved residents were required by their housing contracts to be on one of two "meal plans" offered by the U.T.K. Food Services Department.[11] This requirement is reflected in the numbers of Table 25. Using information from this table, we can now estimate total Department-involved residents' off-campus expenditures during calendar year 1974:

$$(\$2,167)(1,566) + (\$886)(3,201) =$$
$$(\$3,393,522) + (\$2,886,086) = \$6,229,608.$$

That is, 1,566 year-round equivalent basic Department residents on no U.T.K. full-time eating plan spent $3,393,522 off-campus, and 3,201 year-round equivalent basic Department residents on some sort of U.T.K. full-time eating plan spent $2,886,086 off-campus, for a total of $6,229,608. If we now go through an analysis similar to the one in the last section, we arrive at estimates of the personal income and employment impacts of off-campus purchases by Department-involved residence hall students (see Table 26). According to the calculations, such purchases accounted directly for $685,132 in Knoxville area personal income and indirectly for $678,281, for a total of $1,363,413. In terms of employment, such purchases accounted directly for 82 full-time jobs and indirectly for 47 full-time jobs, for a total of 129. These are our conservative estimates.

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[11] Department of Residence Halls, The University of Tennessee, Knoxville; Kenneth L. Stoner, Associate Director, March, 1977.

Table 26.

Department of Residence Halls Residents,
The University of Tennessee, Knoxville
Off-Campus Purchases Impact Calculations, Calendar Year 1974
($ Current)

	Basic Outlay	Basic Outlay Locally	Payroll Factor*	Basic Direct Local Income
Purchases	6,229,608	6,229,608	0.117	728,864

*Assuming 100% retail trade purchases --- a strict, conservative assumption.

		Purchases
(1)	Basic Direct Local Income:	$728,864
(2)	Personal Income Factor:	0.94
(3)	Basic Direct Personal Income [(1) x (2)]:	$685,132
(4)	Personal Income Multiplier [Table 16]:	1.99
(5)	Employment Multiplier [Table 16]:	$14,657
(6)	Knoxville Area PN-FPI / E [Table 21]:	$8,311

Personal Income Impact:

Direct =		=	$685,132
Indirect =		=	$678,281
Total =	(1.99) x ($685,132)	=	$1,363,413

Employment Impact:

Direct =	($685,132) / ($8,311)	=	82
Indirect =	($685,132) / ($14,657)	=	47
Total =		=	129

DEPARTMENT-INVOLVED RESIDENTS' ON-CAMPUS NON-RENTAL SPENDING

We have surveyed on-campus rental spending by Department of Residence Halls student residents, and, also, off-campus spending by those same residents. But what about on-campus non-rental spending? Except for tuition, library fines, and the like, the major on-campus outlets for non-rental monies are the Food Services Department, the Bookstore, and the Parking Authority. Tables 27, 28, and 29 give the fiscal year 1974 revenues and expenditures of these three U.T.K. organizations. The three are self-supporting in the sense mentioned earlier in this report. The local personal income and employment impacts of the three are developed in Table 30 in the same manner as those for the Department of Residence Halls, except that we have aggregated to a greater extent in Table 30. Notice that identical figures have been assumed for fiscal year 1974 and calendar year 1974. The calendar year figures were probably some 2 percent higher if the pattern for the Department of Residence Halls holds. Thus, the impact estimates are even more conservative than they would have been otherwise.

Not all the impact of Food Services, the Bookstore, and the Parking Authority can be attributed to the on-campus non-rental spending of De-

Table 27.

Food Services Department
The University of Tennessee, Knoxville
Financial Statement
Fiscal Year 1974

	Current Dollars
REVENUES	3,893,260.91
EXPENDITURES	
Cost of Sales (Td)	1,834,328.56
Other Expenses	
Salaries (P)	239,628.21
Wages (P)	914,382.79
Staff Benefits (P)	97,302.25
Employee Meals	35,586.80
Supplies	152,855.01
Telephone and Other Communications	9,820.28
Publicity, Subscriptions, and Dues	465.56
Travel and Transportation	6,496.47
Equipment	36,337.13
Insurance	1,755.95
Utilities	103,468.67
Laundry and Other Expenses	46,395.17
Maintenance and Repairs	138,047.55
Printing and Binding	5,577.45
Rent	10,023.10
Computer Service	10,900.00
TOTAL EXPENDITURES	3,643,370.95
OPERATING GAIN (LOSS)	249,889.96
LESS: Administrative Charge	(141,318.38)
Debt Service	
Mandatory	144,125.35
Non-Mandatory	160,627.95
SUB TOTAL	163,434.92
NET GAIN (LOSS)	86,455.04

SOURCE: Report of the Treasurer for the Year Ended June 30, 1974, The University of Tennessee (Knoxville, Tenn.: The University of Tennessee, 1974), pp. 182-183.

Table 28.

Bookstore
The University of Tennessee, Knoxville
Financial Statement
Fiscal Year 1974

	Current Dollars
REVENUES	3,551,125.78
EXPENDITURES	
Cost of Sales (Td)	2,590,810.27
Other Expenses	
Salaries and Wages (P)	356,640.15
Supplies (P)	20,083.06
Printing and Binding	627.57
Publications and Reports	0
Publicity, Subscriptions, and Dues	19,398.81
Rentals	5,943.76
Insurance	1,310.74
Utilities	8,083.48
Maintenance and Repairs	20,946.79
Other	18,506.19
Travel	2,548.94
Motor Vehicle Operation	2,011.84
Postage and Freight	49,897.62
Telephone and Telegrams	9,075.83
Employee Benefits (P)	31,260.02
Equipment	58,296.37
Write-Off of Obsolete Inventory	0
TOTAL EXPENDITURES	3,195,441.44
OPERATING GAIN (LOSS)	355,684.34

SOURCE: Report of the Treasurer for the Year Ended June 30, 1974, The University of Tennessee (Knoxville, Tenn.: The University of Tennessee, 1974), p. 184.

Table 29.

Parking Authority
The University of Tennessee, Knoxville
Financial Statement
Fiscal Year 1974

	Current Dollars
REVENUES	
Parking Fees	359,790.68
Other Revenues	107,503.00
TOTAL REVENUES	467,293.68
EXPENDITURES	
Wages (P)	179,284.88
Other	54,464.01
TOTAL EXPENDITURES	233,748.89
OPERATING GAIN (LOSS)	233,544.79
LESS: Debt Service	0
NET GAIN (LOSS)	233,544.79

SOURCE: Report of the Treasurer for the Year Ended June 30, 1974, The University of Tennessee (Knoxville, Tenn.: The University of Tennessee, 1974), p. 185.

Table 30.

Food Services Department, Bookstore, and Parking Authority,
The University of Tennessee, Knoxville
Payroll and Purchases Impact Calculations, Calendar Year 1974
($ Current)

	Outlay	Outlay Locally	Percent Outlay Locally*	Payroll Factor**	Direct Local Income
Payroll (P)	1,838,581	1,731,943	94.2	1.000	1,731,943
Purchases					
Cost of Sales (Td)	4,425,139	4,239,283	95.8	0.117	495,996
Other	808,841	774,870	95.8	0.303	234,786
Total Purchases	5,233,980	5,014,153			730,782
TOTAL	7,072,561	6,746,096			2,462,725

*Assumed the same as for the Department of Residence Halls. See Table 20.

**Assumed the same as for the Department of Residence Halls. See Table 20. All Cost of Sales purchases are here assumed to be trade, while all Other purchases are here assumed to have a payroll factor the same as that for all services (0.303).

		Payroll	Purchases	Total
(1)	Direct Local Income:	$1,731,943	$730,782	$2,462,725
(2)	Personal Income Factor:	0.94	0.94	0.94
(3)	Direct Personal Income [(1)x(2)] :	$1,628,026	$686,935	$2,314,962
(4)	Proportion Basic***	0.67	0.67	0.67
(5)	Basic Direct Personal Income [(3)x(4)]:	$1,090,777	$460,246	$1,551,024
(6)	Personal Income Multiplier [Table 16]:			1.99
(7)	Employment Multiplier [Table 16] :			$14,657
(8)	Knoxville Area PN-FPI / E [Table 21]:		$8,311	

Personal Income Impact:

Direct = = $1,551,024
Indirect = = $1,535,514
Total = (1.99) x ($1,551,024) = $3,086,538

Employment Impact:

Direct = (698)**** + ($460,246/$8,311) = 753
Indirect = ($1,551,024) / ($14,657) = 106
Total = = 859

***Weighted average: 93% of 6,148 Department of Residence Halls Residents were basic, while 57% of 15,677 other U.T.K. Knoxville area students are assumed to have been basic: [See Tables 15, 18, and 19]:
[(0.93) x (6,148) + (0.57) x (15,677)] / (21,825) = 0.67.

****268 full-time: Food Services, 191 full-time, 399 part-time; Bookstore, 59 full-time, 31 part-time; Parking Authority, ca. 18 full-time.

partment-involved residence hall students, for only part of the revenues of the three came from such students. Department of Residence Halls residents made up 28 percent of total Knoxville area U.T.K. students (Table 15). We will assume they accounted for 28 percent of the revenues of both the Bookstore and the Parking Authority.[1] Food Services revenue data appear to indicate that some 79 percent of its revenue came from Department of Residence Halls students. These percentages are very rough; highly accurate estimates will probably require intricate scientific surveys. In Table 31 we have calculated a weighted value of 53 percent. That is, about 53 percent of the payroll and purchases impact of Food Services, the Bookstore, and the Parking Authority will be attributed to the on-campus non-rental spending of Department-involved residence hall students. This is a conservative proposition, and the conservative calculations are given in Table 31. Such spending accounted directly for $822,043 in Knoxville area personal income and indirectly for $813,822, for a total of $1,635,865. Moreover, this spending accounted directly for 399 Knoxville area jobs and indirectly for 56 jobs, or 455 total jobs. Due to the roughness and conservativeness of these figures, we will adopt them as impact estimates for basic Department-involved residence hall students (through their on-campus non-rental spending).

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[1] We realize, of course, that students are not the only creatures who frequent the Bookstore. This has been taken into consideration.

Table 31.

Department of Residence Halls Residents
The University of Tennessee, Knoxville
Non-Rental On-Campus Purchases Impact Calculations,
Calendar Year 1974
($ Current)

	(1) Revenue	(2) Revenue From Department Residents	% (1) of (2)
Food Services	3,893,261	3,061,919	79
Bookstore	3,551,126	994,315	28
Parking Authority	359,791	100,741	28
	7,804,178	4,156,975	53

Personal Income Impact:

Direct =	($1,551,024) x (0.53)	=	$ 822,043
Indirect =	($1,535,514) x (0.53)	=	$ 813,822
Total =	($3,086,538) x (0.53)	=	$1,635,865

Employment Impact:

Direct =	(753) x (0.53)	=	399
Indirect =	(106) x (0.53)	=	56
Total =	(859) x (0.53)	=	455

SOURCES: Report of the Treasurer for the Year Ended June 30, 1974, The University of Tennessee (Knoxville, Tenn.: The University of Tennessee, 1974), pp. 182-185; and Tables 27, 28, 29, and 30.

CONFEREE NON-RENTAL SPENDING

We have discussed the spending of the U.T.K. Department of Residence Halls per se, the off-campus spending of Department-involved residence hall students, and the on-campus non-rental spending of those same students (and, of course, indirectly the on-campus rental spending of those students). It was pointed out in an earlier section (see Table 17) that visitors (special groups, conferees) to U.T.K. accounted for 3 percent of the rental revenues of the Department during calendar year 1974. The economic impact of visitor rental revenue is included in that of Department spending per se. But we have yet to discuss the non-rental spending of the visitors who provided the rental revenue. This is our topic in the present section.

In the absence of a U.T.K.-specific survey of conferee non-rental spending, we can obtain a rough estimate by looking at others. We do know, however, that at U.T.K. the 1974 Department rental revenue from conferees amounted to $143,647 (Table 17) and that the average rental charge per night per person was $5.50.[1] Thus, the number of conferee nights spent in 1974 was approximately 26,118.

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[1]Department of Residence Halls, The University of Tennessee, Knoxville, David Sharrar, Assistant Director, February, 1977.

A 1974 study of the economic impact of the University of Colorado, Boulder, Colorado, showed that each conferee housed in university residence halls spent an average of $7.60 per day.[2] This figure was based on surveys. We will adopt this figure as our first estimate for U.T.K. conferees. Thus, in 1974, U.T.K. conferees who stayed in university residence halls spent perhaps $198,500 while in Knoxville, exclusive of university room rental charges (26,118 x $7.60 = $198,497). The exact amount will never be known, we might add. All we can expect are better guesses based on modern surveys.

In Table 32, we have gone through impact calculations similar to those for the spending of the Department *per se*. The impacts on Knoxville area personal income and employment are small in comparison to those we have seen before in this report. However, they are not insignificant. According to the calculations, conferee non-rental spending accounted directly for $36,441 in Knoxville area personal income, indirectly for $36,077, being $72,518 in total. Five (5) full-time jobs were directly attributable to such spending, and two (2) full-time jobs indirectly so, for a total of seven (7). These are, no doubt, conservative estimates.

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[2]Vice President for University Relations Office, University of Colorado, *Better University-Community Relations, A Beginning . . . . : An Impact Study of the University of Colorado on the City of Boulder* (Boulder, Colorado: University of Colorado, 1974), p. 27.

Table 32.

T.U.T. Conferees Housed in U.T.K. Department of Residence Halls Residence Halls, Non-Rental Purchases Impact Calculations, Calendar Year 1974 ($ Current)

Purchases	Outlay	Outlay Locally	Percent Outlay Locally	Payroll Factor*	Direct Local Income
Trade	99,250	99,250	100	0.117	11,612
Services	99,250	99,250	100	0.303	30,073
Total	198,500	198,500			41,685

*Assuming one-half trade and one-half service purchases.

		Purchases
(1)	Direct Local Income:	$41,685
(2)	Personal Income Factor:	0.94
(3)	Direct Personal Income [(1) x (2)]:	$39,184
(4)	Proportion Basic [say 0.93]:	0.93
(5)	Basic Direct Personal Income [(3) x (4)]:	$36,441
(6)	Personal Income Multiplier [Table 16]:	1.99
(7)	Employment Multiplier [Table 16]:	$14,657
(8)	Knoxville Area PN-FPI / E [Table 21]:	$ 8,311

Personal Income Impact:

Direct = = $36,441
Indirect = = $36,077
Total = (1.99) x ($39,184) = $72,518

Employment Impact:

Direct = ($36,441) / ($8,311) = 4.4 ≈ 5
Indirect = ($36,441) / ($14,657) = 2.4 ≈ 2
Total = = 6.8 ≈ 7

CREDIT BASE EXPANSION OF LOCAL LENDING INSTITUTIONS

The students and employees of U.T.K. hold a certain amount of their money in the form of demand and time deposits in local lending institutions. These deposits may expand the credit base of the area which may facilitate actual economic activity expansion of other forms. The impact of this is usually so dispersed, however, that measurement is extremely difficult. Such measurement is not a central goal of the present study; we do want to bring up the matter, nevertheless.

A 1974 study of college education in North Dakota found that each full-time student increased the local commercial bank credit base by approximately $312, and that each full-time college employee increased the local commercial bank credit base by approximately $734.[1] In addition, 22,401 full-time students and 4,585 full-time college employees together increased the credit base of local savings and loan associations and credit unions by $6,560,000.[2] Assuming full-time employees accounted for five times as much of this expansion per employee as students, each

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[1] Larry J. Dobesh and Mark S. Henry, Economic Impact of Higher Education in North Dakota (Grand Forks, North Dakota: University of North Dakota Bureau of Business and Economic Research, June, 1975), pp. 17, 58, 89.

[2] Ibid., p. 60.

student's expansion was $145 and each employee's expansion was $725, in savings and loan associations and credit unions. Thus, total credit base expansion was perhaps $457 per full-time student ($312 + $145), and $1,459 per full-time employee ($734 + $725).

If we adopt these results at U.T.K. for the moment, we could possibly say the following: Full-time employees of the Department of Residence Halls (162) expanded the local credit base by $236,358 during calendar year 1974 (162 x $1,459); Department-involved residence hall students (6,148 full-year) expanded the local credit base by $2,809,636 during calendar year 1974 (6,148 x $457); full-time employees of U.T.K. Food Services, the Bookstore, and the Parking Authority (268 total) expanded the local credit base by $391,012 during calendar year 1974 (268 x $1,459); and all three groups together expanded the local credit base by some $3,437,006. We will assume here (conservatively) that all the student employees of the four U.T.K. organizations mentioned were also Department-involved residence hall students. Since we have assumed that only about 79 percent of the full-time employees of Food Services and only about 28 percent of the full-time employees of the Bookstore and Parking Authority are attributable to Department-involved residence hall students (see Tables 30 and 31), only $250,948 of the credit base expansion due to their full-time employees should be attributed on face to Department-involved residence hall students. This means that the total credit base expansion attributable to the Department and to Department-involved residence hall students during calendar year 1974 was $3,296,942. An estimate so derived is spurious, of course, and much time and effort will be necessary for genuine Knoxville area results.

TAXES AND BONDED INDEBTEDNESS

The University of Tennessee is the State of Tennessee. In the past, the State has chosen not to pay itself taxes, either to itself in Nashville (the main seat of itself) or to itself in the Knoxville area in the form of its county and city units.[1] Two major sets of taxes which the State has chosen not to pay to itself are "local" property taxes and "state" and "local" sales and use taxes. Now, the question sometimes arises as to the local effect of this state government policy. The main problem in determining the local effect is the fact that the policy is a long-standing one, and, thus, any attempt to estimate what-might-have-been had the policy been otherwise, is extremely speculative.

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[1] Concepts of government are involved here in an important way. There are governmental units in the Knoxville area which are not included under official departments of the State of Tennessee. Yet, there are constitutionally only two levels of government in the United States --- federal and state. All units of government in the Knoxville area, exclusive of federal, are in fact state units. For example, the city government of Knoxville and the county government of Knox County are in fact state units of government. There is a certain degree of independence of the city and county governments, yes, but this is true of all units of the State of Tennessee.

In regard to the residence halls in which the U.T.K. Department of Residence Halls is involved, a couple of directly opposed assumptions can be outlined: (1) We could assume that if the state had not built those residence halls, then privately owned housing businesses of equal value would have been forthcoming in the same area. These privately owned housing businesses would have paid taxes to the state in Nashville and to the county and city units of the state in the Knoxville area. The county and city units of the state in the Knoxville area could have used their portion of the taxes so collected for whatever purposes they use such funds, say for employing additional teachers or for defraying the costs of another land-fill "trash" site. (2) On the other hand, we could assume that if the state had not built those residence halls, then the land and buildings which were there previously would have remained just as they were, i.e., in the same uses and of the same value, paying the same level of taxes (while allowing for general inflation, of course).

Neither of the assumptions outlined is realistic, though the second certainly seems far more reasonable than the first. Let us begin by assuming the most drastic of the assumptions, i.e., number one (1).

Property Taxes. What would local property taxes have been in 1974 for the residence halls in which the U.T.K. Department of Residence Halls is involved, under assumption (1)? This is a difficult question to answer primarily because the City of Knoxville and the County of Knox do not normally make appraisals of any property owned by The University of Tennessee. In 1971, for example, a complete reappraisal was made of all

taxable property in Knox County, Tennessee, but University property being non-taxable, zeros were entered on the tax books for each piece of University property. A professional appraisal firm could, of course, be employed to make appraisals of University property if so desired. This study, however, does not have that capability. The University itself keeps book value figures for each of its properties, but these figures are in nowise comparable to local government appraisal values. As pointed out in Table 13, unless there are major renovations, University book values remain essentially unchanged over a period of several years. Local-government appraisal values, on the other hand, often change from year to year, and in the case of residential apartment buildings, the appraisal value will often depreciate over a period of several years.

In the absence of official or professional appraisal values, what are we to do? Well, fortunately, we have a very appropriate control, or standard of comparison, at U.T.K. There are fourteen (14) residence halls in which the U.T.K. Department of Residence Halls is involved. Right in the midst of six of these is a privately owned residential unit by the name of Shelbourne Towers Apartments. Among other taxes, the owners of Shelbourne Towers Apartments pay local property taxes. Table 33 shows the calculation of the actual amount of local property taxes paid on Shelbourne in 1974 by the owners. The owners paid $11,228 on 1.8 acres of land, or $0.1431996 per square foot (1 acre = 43,560 sq. ft.), and they paid $31,732 on the building, or $0.2160798 per square foot of floor space, for a total of $42,960 in local property taxes. The 1.8 acres of land were appraised

Table 33.

Local Property Taxes
Shelbourne Towers Apartments
Knoxville, Knox County, Tennessee
1974
($ Current)

		Appraised Value	
LAND	Size	Value Per Sq. Ft.	Total
	78,408 sq. ft. = 1.8 acres	$5.00	$392,040

Assessment at 40% of appraised value:
$392,816 x 0.40 = $156,816

City	City Tax Rate per $		City Land Tax
$156,816	x 0.0375	=	$5,880.60

County	County Tax Rate per $		County Land Tax
$156,816	x 0.0341	=	$5,347.43

Total City and County Land Taxes = $11,228.03

BUILDINGS	Size	Appraised Value
	146,853 sq. ft. of floorage	$1,107,960

Assessment at 40% of appraised value:
$1,107,960 x 0.40 = $443,184

City	City Tax Rate per $		City Buildings Tax
$443,184	x 0.0375	=	$16,619.40

County	County Tax Rate per $		County Buildings Tax
$443,184	x 0.0341	=	$15,112.57

Total City and County Buildings Taxes = $31,731.97
Buildings Taxes per sq. ft. of floorage = ($31,731.97) / (146,853)
= $0.2160798

TOTAL CITY AND COUNTY PROPERTY TAXES = $11,228.03 + $31,731.97 = $42,960.00.

SOURCE: Knox County, Tennessee, County Property Assessor's Office. City taxes were due in May; County taxes were due in October.

at $392,040, or $5.00 per square foot, while the building was appraised at $1,107,960, in 1974. Shelbourne provides us with an example of how local-government appraisal values often change from year to year. The appraisal of the Shelbourne building in 1973 was $1,292,220; in 1974, $1,107,960; in 1975, $1,031,760; and in 1976, $928,580.[2] Over the same period, University book values for the 14 residence halls mentioned above did not change. Shelbourne also provides us with another example of the different natures of University book values and local-government appraisal values. Shelbourne was opened in 1951, contains 146,853 square feet of floorage, and had an appraised value in 1974 of $1,107,960. The University's Melrose Hall (residence hall) was opened in 1948, contains 74,270 square feet of floorage, and carried a University book value in 1974 of $1,533,000. The two buildings are quite similar in construction, so it seems obvious, in this instance, at least, that the University book value is much higher than what the local-government appraised value would or should be if it had been determined judiciously. For these and other reasons, University book values do not appear to make good local-government appraisal values.

There were 14 residence halls in which the U.T.K. Department of Residence Halls was involved in 1974. These residence halls sat on about 1.8 acres of land each, so if they had been taxed in 1974 at the same rate as Shelbourne, the local land property tax would have been ($11,228) x (14) =

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[2]Knox County, Tennessee, County Property Assessor's Office, February, 1977. The City of Knoxville currently uses the same assessment values as the County of Knox; the City has done this since 1974.

$157,192. The 14 residence halls contained a total of 1,806,156 square feet of floor space, so if they had been taxed in 1974 at the same rate as Shelbourne, the local building property tax would have been (1,806,156) x ($0.2160798) = $390,274.[3] Total local property taxes on the 14 residence halls would have been ($157,192) + ($390,274) = $547,466. It is interesting to note that had the University book value of the 14 residence halls been used ($30,585,000), total local property taxes would have been $1,033,147.[4] This latter figure could be considered a maximum.

We will not here attempt to estimate what local property taxes would have been for U.T.K. Food Services, the Bookstore, and the Parking Authority, as such. It should be noted, however, that two of the major Food Service units are located in two of the 14 residence halls, that one of the major Bookstore units is located in one of the 14 residence halls, and that the Parking Authority is involved in parking lots surrounding the 14 residence halls. In other words, if the U.T.K. Department of Residence Halls had paid local property taxes on only those aspects of the residence halls in which it was immediately involved, those taxes would have been less than calculated above.

Sales and Use Taxes. What would state and local sales and use taxes have been in 1974 for the 14 residence halls in which the U.T.K. Department of Residence Halls was involved, under assumption (1)? For simplicity,

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[3] Depreciation and appreciation, of appraisal values, have not been considered. Market value has been considered.

[4] ($30,585,000) x (0.40) = $12,234,000. ($12,234,000) x (0.0375) + ($12,234,000) x (0.0341) = $875,955. ($875,955) + ($157,192) = $1,033,147. See Tables 13 and 33.

we will assume that the same level of efficiency would have been maintained for the residence halls under assumption (1). First, notice the information in Table 34 regarding sales and use tax rates, collections, and distributions in the Knoxville area during fiscal year 1974. Notice, in particular, that distributions of the state tax to all Tennessee areas ($31,656,374) was about 7 percent of total state tax collections for Tennessee ($447,288,503), and that the Knoxville area received about 10 percent of those same state tax distributions. We should remark here that all Tennessee sales taxes, both state and local, are collected by the Tennessee State Department of Revenue which "charged" the city and county units 1.5 percent for doing so in fiscal year 1974.[5]

Now, if all the purchases of the U.T.K. Department of Residence Halls in 1974 had been Knoxville area regular sales purchases (see Table 20), local sales taxes if they had been collected would have been ($1,471,404) x (0.015) = $22,071, where it is assumed that the local sales tax rate would have been 1.5 percent throughout the Knoxville area. State sales and use taxes on those same purchases would have been ($1,471,404) x (0.035) = $51,499.

If the sales of the U.T.K. Department of Residence Halls in 1974 had been Knoxville area regular sales (see Table 17), local sales taxes if they had been collected would have been ($4,526,204)[6] x (0.015) = $67,893, where it is again assumed that the local sales tax rate would have been

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[5] See p. 12 of the source of Table 34.

[6] Does not include Forfeited Deposits, Vending Commissions, and Laundry Commissions, totaling $92,325.

Table 34.

State Sales and Use Taxes, and Local Sales Taxes,
Knoxville Area, Fiscal Year 1974
($ Current)

Collections of State Sales and Use Taxes in	Collections		% of Tennessee
Knoxville Area	$ 50,088,864		11.198
All Tennessee Areas	$425,357,780		95.097
Out-of-State	$ 21,930,723		4.903
Tennessee	$447,288,503	(A)	100.000

(42% of total state revenue = $447,288,503)

Tax Rates in	State Sales and Use Tax Rate	Local Sales Tax Rate
Knox County (including all towns)	3.5%	1.5%
Anderson County (including all towns)	3.5%	n.ap.
All towns except Oak Ridge	3.5%	1.0%
Oak Ridge	3.5%	0.0%
Blount County (including all towns)	3.5%	1.5%

Actual Distributions to	Of Local Tax	Of State Tax	
Knoxville Area	$ 16,390,611	$ 3,154,438	(B)
All Tennessee Areas	$147,306,678	$31,656,374	(C)

(C) is of (A) : 7.07739%

(B) is of (C) : 9.96461%

n.ap. : not applicable

SOURCE: Tennessee Taxpayers Association, Sales and Use Tax Collections, State of Tennessee, Fiscal Year Ending June 30, 1974, An Analysis and Comparison With Prior Years, Based Upon Data Supplied by the Department of Revenue of the State of Tennessee, Research Report No. 189 (Nashville, Tenn.: Tennessee Taxpayers Association, November 1, 1974), pp. 3, 4, 6, 12, 17, 18-20, 21-22.

1.5 percent throughout the Knoxville area. State sales and use taxes on those same sales would have been ($4,526,204) x (0.035) = $158,417.

Referring to Table 34, it can be seen that only a portion of the state sales and use taxes collected in the Knoxville area, on the purchases and sales of the Department, would have been returned to the area's city and county units. The amount returned of that collected, resulting from direct Department purchases and sales, would have been approximately ($51,499 + $158,417) x (0.0707739) x (0.0996461) = $1,480, an almost negligible amount from our standpoint. But the local sales taxes collected, resulting from direct Department purchases and sales, would not have been negligible, as they would have been approximately ($22,071) + ($67,893) = $89,964, under our assumptions. Thus, if state and local sales and use taxes had been collected in 1974 on the purchases and sales of the U.T.K. Department of Residence Halls, under our assumptions, Knoxville area local government revenues would have increased by a maximum of ($1,480) + ($89,964) = $91,444.

Of course, all such tax estimates are highly speculative, as previously mentioned, for we have no way of knowing what-might-have-been had the State of Tennessee not exempted itself from paying these taxes over the years.

What about the case under assumption (2), i.e., the case where it is assumed that if the state had not built the residence halls, then the land and buildings which were there previously would have remained just as they were, in the same uses and of the same value, paying the same level of

taxes? We get an answer of net impact by looking at what the University actually did during a period and comparing it with what would have been the results under assumption (2). During the period June 30, 1962, to June 30, 1968, The University of Tennessee in Knoxville underwent a tremendous physical expansion. We have discussed this expansion in earlier sections of this report. According to an investigator of the expansion, the revenue gains to the local city and county government units resulting from this expansion offset the total revenue losses to the local city and county government units by approximately ten times![7] While only a portion of the expansion consisted of new residence halls in which the U.T.K. Department of Residence Halls was involved, a similar outcome could be expected if only residence halls were focused on in such a study. The sources of revenue loss considered were: city and county property tax exemption, road construction, and street maintenance. The sources of revenue gain considered were: University payroll and student expenditures. Gains from the actual construction of University structures were not included in the comparison of gains and losses by the investigator, in particular. The big, unanswered, and perhaps unanswerably, question, of course, is what the case would have been had the University not had tax exemption status and the power of eminent domain.

Bonded Indebtedness. Of the fourteen residence halls being considered in this study, only two are wholly owned by The University of Tennessee. (See Table 35.) The other twelve have annual debt service require-

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[7]Vincent R. DeCarlo, "The Net Direct Economic Effect of The University of Tennessee on the City of Knoxville and on Knox County Resulting from the Expansion of the Knoxville Campus Since 1962," M.S. thesis (Finance), The University of Tennessee, Knoxville, March, 1969, p. iii and elsewhere.

Table 35.

The University of Tennessee, Knoxville
Residence Halls in which the Department of Residence Halls is Involved, Debt Service Information
Calendar Year 1974

	Hall	Year Opened	Debt Service ($ Current)	Year to be Paid Off
1.	Malrose	1948	0	-
2.	Strong	1925	0	-
3.	Clement	1965	139,286	2007
4.	Greve	1956	41,880	1999
5.	Massey	1960	41,880	1999
6.	Dunford	1963	46,218	2003
7.	Hess	1961	101,027	2000
8.	Morrill	1968	236,429	2005
9.	Reese	1966	109,817	2007
10.	Humes	1966	109,818	2007
11.	North Carrick	1967	168,174	2005
12.	South Carrick	1967	168,175	2005
13.	Andy Holt	1970	437,248	2005
14.	Gibbs	1962	32,730	2001
			1,632,682	

Note: Debt service payments vary somewhat from year to year due to the variance in interest credit received from the trustee holding the funds and due to the variance in the amount of "non-mandatory" debt service transfers.

SOURCE: Department of Residence Halls, The University of Tennessee, Knoxville, Mr. Kenneth L. Stoner, Associate Director, December, 1976, and Statements of Operations, December 1973, June 1974, and December 1974, and David Sharrar, Assistant Director, January, 1977.

ments projected through the year 2007. Debt service is a potential source of basic personal income (and employment) for the Knoxville area. The Department of Residence Halls pays its debt service requirements, bond retirement, out of its revenues, approximately 93 percent of which were basic in 1974, as discussed earlier. Now, if all the bond holders lived in the Knoxville area and spent their bond returns in the Knoxville area, roughly 93 percent of the debt service payments by the Department in 1974 could be considered basic. But the bond holders are scattered about, and we have not pursued their various whereabouts and spendabouts in this study. A more thorough study would. In any case, the fact that 93 percent of the funds going for debt service was basic in 1974 means that debt service could only be considered an economic boost to the Knoxville area and never a burden, insofar as the U.T.K. Department of Residence Halls was concerned, in 1974.

The University has a great advantage over private business people in regard to residence halls. Being the State of Tennessee, it has tax exempt status, the power of eminent domain, and the bonds issued to build the halls have been backed by the full resources available to the State. Local business people have profited greatly from the presence of the University in the Knoxville area --- all agree. Would they have profited more had the University not built its own residence halls? The answer will almost always be in the negative, unless it is assumed, for example, that a solely private school of the same type and scale as the present University would have developed. The State of Tennessee has, in effect,

created a basic business market for Knoxville area business people. Business people realize this. In the immediate case, for example, by not paying taxes, the University kepts the price of attending the University lower than otherwise, and, according to numerous studies, the lower the price, the greater the numbers of students willing and able to attend a particular school, all other factors left unconsidered.

OTHER AND FINALE

We have made no attempt in this exploratory report to survey more than a few very narrowly defined economic impacts. A detailed, comprehensive study of the economic, social, and political impact of The University of Tennessee in total is lacking, and this void has been our major obstacle in pursuing the present, more circumscribed, relatively low budget, study: From our perspective, there is absolutely no way to see the part without also seeing the whole. In this section, we will mention briefly some of the aspects we have not touched upon in any real detail in earlier sections, together with providing a short overview of those earlier sections.

The construction impact has not been discussed in detail. We have offered certain other impact estimates — why not for construction? Well, for one, our other impact estimates have been based on 1974 data, and there was, in fact, no substantial Department-involved residence halls construction in 1974. However, it should be repeated here that during the 1960's, ten new Department-involved residence halls were constructed at a cost of about $30 million. It has been estimated that over 40 percent of the total cost of these new buildings were labor

costs, and that Knoxville area local governments gained directly a minimum of one million dollars (1968 dollars) in new taxes as a result.[1] Total new building construction at U.T.K. during the period 1962-1970 occurred at a cost of over $100 million, we add. But construction of this magnitude is not normal at U.T.K., and has not continued into the 1970's on the same scale. The non-construction expenditures of the University have continued, however, unabated, and so have those of the students and staff.

The impact of Knoxville-area spending by visitors to Department-involved residence hall students has not been discussed. In North Dakota public colleges during the 1973-1974 school year, visitors to 26,561 students (headcount) were estimated to have spent at least $2,112,000, or about $80 per student.[2] If this same per student figure were applied to 7,451 basic U.T.K. Department-involved residence hall students[3], we would get a 1974 estimate of $596,000. Even if the actual figure for U.T.K. were only one-half or one-third this amount, it would have been a substantial figure, exceeding, even in the latter instance, the non-rental spending of conferees who were housed in Department-involved residence halls (see Table 32).

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[1]Based on findings of Vincent R. DeCarlo, "The Net Direct Economic Effect of The University of Tennessee on the City of Knoxville and on Knox County Resulting from the Expansion of the Knoxville Campus Since 1962," M.S. thesis (Finance), The University of Tennessee, Knoxville, Tennessee, March, 1969, pp. 24-25.

[2]Larry J. Dobesh and Mark S. Henry, Economic Impact of Higher Education in North Dakota (Grand Forks, N.D.: University of North Dakota Bureau of Business and Economic Research, June, 1975), pp. 14, 48-49.

[3](8,012) x (0.93) = 7,451.16. See Tables 14 and 19.

We have not discussed in separate detail the costs to Knoxville-area local governments of providing services to Department and Department associated employees, to Department-involved residence hall students, and to the indirect population pinpointed as depending upon their activities. These services include, among others, police and fire protection, public educational services, public recreational services, and street construction, repair, and maintenance. Also, we have not estimated the environmental costs of the increased traffic congestion, increased air, water, and noise pollution, etc., etc., due specifically to these groups (or, to be consistent, to the basic and basic-derived components of these groups). Certainly, such costs are substantial = significant, and they are what might be referred to as "negative" impacts. Often we think of each individual or group of an area as paying for the government services rendered them. In conformity with this thinking, we have attempted to estimate in an earlier section of this report the major taxes not paid by the Department because it had tax exempt status, it being a part of the State of Tennessee. We will return to this matter very shortly.

Most writers on the subject seem to have agreed that for various reasons, rents are lower for students attending U.T.K. than they would have been had U.T.K. stayed out of the "housing business" altogether. We expressed the study view at the end of the last section that "local business people" were better-off as a result. But what about "local non-business people?" What about local non-student job seekers, other than prospective U.T.K. employees? Many basic students also seek local

jobs (mostly part-time) while in the Knoxville area. Assuming additional basic students attend U.T.K. because of lower available living costs, then competition for local jobs is greater, right? Wrong, no doubt. The reason is, the number of local jobs is greater due to the basic students being in the Knoxville area (as discussed in previous sections), and, basic students are overall net importers of money. Especially is this true for Department-involved basic residence hall students, it is safe to say.

In Table 36, we have brought together four of the "positive" impact estimates as calculated in previous sections of this report. These separate estimates (for calendar year 1974) have been labeled I, II, III, and IV. Now, in our last section, on taxes and bonded indebtedness, we estimated, under a rather drastic general assumption, that total 1974 local government property taxes on the 14 Department-involved residence halls --- including some aspects of other U.T.K. organizational units --- would perhaps have been (had they been collected) $547,466, if judiciously levied, and suggested that $1,033,147 could probably be considered an absolute maximum figure, under our assumptions. Also, we estimated in that section that if state and local sales and use taxes had been collected in 1974 on the purchases and sales of the U.T.K. Department of Residence Halls, again under drastic assumptions, then Knoxville area local government revenue would have increased by a maximum of $91,444. Thus, we estimated, under the adopted assumptions, that 1974 Knoxville-area local government revenues would have increased by a maximum total of $1,124,591 ($1,033,147 plus $91,444) had these major taxes in fact

Table 36.

Selected "Positive" Impact Estimates,
Calendar Year 1974

Impact Unit		Department of Residence Halls Payroll and Purchases (I)	Department Residents' Off-Campus Purchases (II)	Department Residents' On-Campus Non-Rental Purchases (III)	Department Conferees' Non-Rental Purchases (IV)
Personal Income ($Current)					
Direct	=	$1,501,782	$685,132	$822,043	$36,441
Indirect	=	1,486,764	678,281	813,822	36,077
Total	=	2,988,546	1,363,413	1,635,865	72,518
Employment					
Direct	=	488	82	399	5
Indirect	=	102	47	56	2
Total	=	590	129	455	7

Impact Unit		SUM
Personal Income ($Current)		
Direct	=	$3,045,398
Indirect	=	3,014,944
Total	=	6,060,342
Employment		
Direct	=	974
Indirect	=	207
Total	=	1,181

SOURCES: Tables 20, 26, 31, and 32.

been collected. Now, notice that "positive" impact estimate I (Table 36) would itself have easily outweighted this "negative" impact of $1,124,591. Of course, as noted above, we have not estimated all "negative" impacts; neither have we estimated all "positive" impacts. It is difficult and costly to place dollar estimates on all the "positive" and "negative" impacts, and, indeed, the list of impacts is as long as the imagination. However, this should not be interpreted as an argument for overlooking or failing to pursue any contemplated impact estimate. It is simply a fundamental situation which each and every impact estimator must face up to in light of their specific objectives and time and monetary constraints.

We should note here that it has been conventional for economic impact studies of post-highschool educational institutions to arrive at "net-positive" total impacts for local areas.[4] Using received methodology and concepts, and considering data bias, this will normally be the case. And for so-called self-supporting "auxiliary enterprises," it is (will be) almost universally the case. If the "human capital" contributions of post-highschool educational institutions to local residents are brought into the picture, there is certainly little way to arrive at a "net-negative" result. Back in

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[4]For a study which does not, see G. Geoffrey Booth and Jeffrey E. Jarrett, "The Identification and Estimation of a University's Economic Impacts," Journal of Higher Education, vol. XLVII, no. 5 (September/October, 1976), pp. 565-576. The Dobesh and Henry study, op. cit., p. 90, on the other hand, concluded, in conventional style, that for each $1.00 the State of North Dakota contributed to higher education, the colleges and universities returned $2.10 to the economy of North Dakota.

a very early section of this report, we gave the result of an investigation which concluded that the U.T.K. benefit/cost ratio in terms of monetized human capital was 5.24 in fiscal year 1974 for the East Tennessee region of Tennessee.[5] Another fairly recent finding along this line is that selected Tennessee "industrialists," when asked the question "What do you personally think should be done by local and State government to encourage the expansion of existing manufacturing firms?" they gave the following answer most frequently: More and better educational and vocational training facilities should be provided.[6] And a study of sources of economic growth in Tennessee for the period 1950-1967 concluded, "The profile which emerges, in brief, is this: when the separate contributions of different sources are evaluated, the major thrust to Tennessee's growth in this period stems from its labor force, not just in terms of numbers employed but also in terms of the greatly increased quality of the average worker."[7] There has been no shortage of believers in the net-positive stimulus which increased educational opportunities have provided to the economic growth of

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[5]John R. Moore and Craig G. Ericksen, The Direct and Indirect Economic Impact on the Knoxville Area of Units of The University of Tennessee Located at Knoxville, 1973-1974 (Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, January 15, 1976), p. 3.

[6]William R. Schriver and Charles C. Sorsby, Factors Affecting the Attraction and Expansion of Industry in Tennessee --- The Industrialist's Viewpoint (Memphis, Tenn.: Memphis State University Bureau of Business and Economic Research, August, 1968), p. 2.

[7]Thomas A. Bieler, Sources of Growth in the Tennessee Economy [1950-1967] (Knoxville, Tenn.: The University of Tennessee Center for Business and Economic Research, December, 1973), p. 1; also, see pp. 45-64.

Tennessee and its regions. A specific question for us, however, is what role does U.T.K. Department-involved residence halls (and associated facilities and activities) --- employees, students, and all --- have in the education of the resident students? Only by answering this question can a true, full measure be found of: the direct and indirect economic impacts of the U.T.K. residence halls activity complex on U.T.K. and the Knoxville area. Oh, sure, so far as "positive" impacts are concerned, we could say that the SUM impact estimates given in Table 36 are the ones. We could say $6,060,342 represented about 0.31 percent of total 1974 Knoxville area personal income[8], and we could say that 1,181 jobs represented about 0.61 percent of total 1974 Knoxville area employment.[9] We could caution that these are very conservative estimates compared to past estimates of U.T.K.'s total impact, which might say that U.T.K. overall accounted for 8 percent of the Knoxville area's total personal income and for about the same percentage of the Knoxville area's employment.[10] We could say these things and no more, but we have not, and will not, for to do so would seriously misrepresent the true state of affairs at U.T.K. Perhaps one of the best indications of why we believe this to be the case is contained in a mid-1976 statement by the Department's own Director:

> "Our Department of Residence Halls operates 14 residence halls which house approximately 8,000 single students. These halls are oversubscribed each quarter, even though residence halls in many other states are being 'mothballed' or put to

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[8] [($6,060,342)/($1,928,765,000)][100] = 0.31 percent. See Table 8. (Total personal income is for the Knoxville area extended.)

[9] [(1,181)/(192,734)][100] = 0.61 percent. See Table 7.

[10] See the fourth section of this report.

other uses because of waning student interest. We think this fact is indicative of student satisfaction with our facilities and our program.

"No single reason can be credited for this success, but there are several factors which contribute to it. The factors include our 'differentiated housing' concept, with its wide variety of housing alternatives for individual students; the 'security emphasis' of both the UTK administration and the staff of the Department of Residence Halls; the nominal room rates charged; and the educational supplement provided to residents through programming established in each hall."[11]

Whether or not one agrees with the "factors" given by the Director, the question is what educational significance do U.T.K. resident students find in the U.T.K. residence halls activity complex? The question which future estimators must pursue if they hope to arrive at perceptively more useful type economic impact estimates is: How many and to what extent are the students who reside in Department-involved residence halls "educational campus resident students," that is, to what extent do they see or later remember their education at U.T.K. as involving significantly an association with residence halls? (When they or some impartial unit reflect on their college education, they see residence halls, along with classrooms, teachers, students, the sports stadium, a diploma, cafeterias, etc.) This question is relatively unimportant quantitatively only if an overwhelming portion of the Department-involved residence hall students are not educational campsus resident students, that is, only if an overwhelming portion see clearly that the official credits handed out by the University are what is gotten at U.T.K.: all else, particularly any association with residence halls, is not held as significant educationally, either now or later, either by the student or by some totally impartial unit. With this, we end our exploratory report.

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[11] James J. Grubb, "From the Director," Residence Hall Roster (Knoxville, Tenn.: The University of Tennessee), vol. 1, no. 1 (Summer, 1976), p. 1.

SELECTIVE BIBLIOGRAPHY

Better University-Community Relations, A Beginning . . . An Impact Study of the University of Colorado on the City of Boulder. Prepared for the Board of Regents, University of Colorado. Boulder, Colo.: University of Colorado Office of the Vice President for University Relations, February, 1974. xiii, 147 pp.

Bieler, Thomas A. Sources of Growth in the Tennessee Economy [1950-1967]. Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, December, 1973. viii, 138 pp.

Booth, G. Geoffrey, and Jeffrey E. Jarrett. "The Identification and Estimation of a University's Economic Impacts." Journal of Higher Education, vol. XLVII, no. 5 (September / October, 1976), pp. 565-576.

Caffrey, John, and Herbert H. Isaacs. Estimating the Impact of a College or University on the Local Economy. Washington, D.C.: American Council on Education, 1971. xi, 73 pp.

Campus in Transition. New York, N.Y.: Educational Facilities Laboratories, 1975. 76 pp.

College and University Business Administration. Third Edition. Washington, D.C.: National Association of College and University Business Officers, 1974. xiii, 267 pp.

Condiles, Peter. "An Analysis of the Spending Habits of Residence Hall Students at The University of Tennessee, 1959-60." M.S. thesis (Marketing); Knoxville, Tenn.: The University of Tennessee, December, 1961. ix, 110 pp.

Corry, Ormond C., et al. Public Education and the Tennessee Social and Economic Outlook. For the Education Survey Subcommittee, Tennessee Legislative Council Committee, State Capital Building, Nashville 3, Tennessee. Knoxville, Tenn.: The University of Tennessee Bureau of Business and Economic Research, December, 1957. viii, 136 pp.

The Course Team, The Open University. The City as an Economic System. Social Sciences: A Second Level Course, Urban Development, Units 10-14. Bletchley, Burks, United Kingdom: The Open University, 1973. 192 pp.

Cox, Peter R. Demography. Fifth Edition. Cambridge, England, et al.: Cambridge University Press, 1976. ix, 393 pp.

Greekmore, Betsy Beeler. Knoxville. Third Edition. Knoxville, Tenn.: The University of Tennessee Press, 1976. x, 333 pp.

Cross Reference Directory, Greater Knoxville and Vicinity . . . April, 1975. Independence, Kansas: City Publishing Company, 1975. ca. 1,000 pp.

Currence, Mary G., compiler and editor, with assistance from George Kronbach, Carolyn Clark, and Carolyn Vickers. Tennessee Statistical Abstract 1969. (1st. edition). Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, December, 1968. ix, 707 pp.

_____, editor. Tennessee Statistical Abstract 1971. (2nd. edition). Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, May, 1971. ix, 712 pp.

_____. Tennessee Statistical Abstract 1974. (3rd. edition). Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, April, 1974. xi, 705 pp.

Current Issues in Higher Education, 1966- . (especially 1969: Agony and Promise). San Francisco, Calif.: Jossey-Bass Inc., Publishers, 1966- . ("A publication of the American Association for Higher Education").

Dancy, Edward D., Jr. "A Study of Knox County Tax Assessments for 315 Residential Properties Within the City of Knoxville [Tennessee]." M.S. thesis (Finance); Knoxville, Tenn.: The University of Tennessee, March, 1951. ix, 94 pp.

DeCarlo, Vincent R. "The Net Direct Economic Effect of The University of Tennessee on the City of Knoxville and on Knox County Resulting From the Expansion of the Knoxville Campus Since 1962." M.S. thesis (Finance); Knoxville, Tenn.: The University of Tennessee, Knoxville, March, 1969. viii, 54 pp.

Dobesh, Larry J., and Mark S. Henry. Economic Impact of Higher Education in North Dakota. North Dakota Economic Studies No. 10. Grand Forks, N.D.: University of North Dakota Bureau of Business and Economic Research, June, 1975. viii, 93 pp.

East Tennessee Development District. Knoxville Metropolitan Area Land Use Plan. Report No. ET-SA-16. Knoxville, Tenn.: East Tennessee Development District, June, 1972. viii, 66 pp.

Ebbers, Lary H., Kenneth E. Marks, and Kenneth L. Stoner, compilers. Residence Halls in U. S. Higher Education: A Selective Bibliography. Ames, Iowa: Iowa State University Library, 1973. xvi, 610 pp.

The Economic Structure of Tennessee: A Regional Analysis. Memphis, Tenn.: Memphis State University Bureau of Business and Economic Research and Center for Manpower Studies, November, 1973. xiii, 147 pp.

Elliott, Billie C. A Longitudinal Study of Student-College Interaction at The University of Tennessee, Knoxville. Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, July 15, 1970. [iv], 45 pp.

Engels, Richard A., and Annie A. Moore. Tennessee Migration, Population, Families, Income, and Manpower Projections to 1990 For Development Districts and Counties. Nashville, Tenn.: Tennessee State Planning Office, July, 1974. ix, 584 pp.

Financial Reporting for Tennessee Public Colleges and Universities. Nashville, Tenn.: Tennessee State Department of Finance and Administration, Tennessee State Comptroller of the Treasury, and Tennessee State Higher Education Commission, 1969 or 1970. v, ca. 150 pp.

Folmsbee, Stanley J., Robert E. Corlew, and Enoch L. Mitchell. Tennessee: A Short History. Knoxville, Tenn.: The University of Tennessee Press, 1969. xv, 640 pp.

Ford, Gerald R., et al. Economic Report of the President, Transcribed to Congress January 1976; Together With the Annual Report of the Council of Economic Advisers. Washington, D.C.: U. S. Government Printing Office, 1976.

Ford, Michael C., James R. Spillman, with Wiley E. Lynch. Physical Facilities Inventory and Space Utilization Study: A Report to the Chairman, Tennessee Higher Education Facilities Commission. Nashville, Tenn.: Tennessee State Higher Education Commission, May, 1971. iv, 141 pp.

Friedmann, John, and William Alonso, editors. Regional Policy: Readings in Theory and Applications. Cambridge, Mass.: The MIT Press, 1975. xxi, 808 pp.

Friedmann, John R. P. The Spatial Structure of Economic Development in the Tennessee Valley: A Study in Regional Planning. Program of Education and Research in Planning, Research Paper No. 1; Department of Geography, Research Paper No. 39. Chicago, Ill.: The University of Chicago Press, 1955. xiv, 187 pp.

Gaither, Gerald H., and Anthony C. Griffin. The International Student at The University of Tennessee. Knoxville, Tenn.: The University of Tennessee Office of Institutional Research. July 12, 1971, vol. XII, no. 1. 26 pp.

Garrison, Charles B. "A Case Study of the Local Economic Impact of Reservoir Recreation." Journal of Leisure Research, 1974, 6 (Winter), pp. 7-19.

_____. "The Impact of New Industry: An Application of the Economic Base Multiplier to Small Rural Areas." Land Economics, vol. XLVII, no. 4 (November, 1972), pp. 329-337.

_____. "New Industry in Small Towns: The Impact on Local Government." National Tax Journal, vol. XXIV, no. 4 (December, 1971), pp. 493-500.

_____. Projections of the Knoxville Economy to 1980 and 1990. Prepared for Greater Knoxville Chamber of Commerce, Knoxville, Tennessee. Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, May, 1974. iii, 37 pp.

Griffenhagen & Associates, preparer under the auspices of Tennessee Taxpayers Association. Report on An Exploratory Examination of Local Government in the Knoxville-Knox County Area. 2 parts. Nashville, Tenn.: Tennessee Taxpayers Association, 1941.

Grubb, James J. "From the Director." Residence Hall Roster (Knoxville, Tenn.: The University of Tennessee), vol. 1, no. 1 (Summer, 1976), p. 1.

Hammer and Company Associates. The Economy of Metropolitan Knoxville. Prepared for the Metropolitan Planning Commission of Knoxville and Knox County [Tennessee]. Washington, D.C.: Hammer and Company Associates, November, 1962. xvi, 181, [18] pp.

Heiskell, Miss Catherine, and Miss E. Lucy Ogden, compilers. A List of Acts, Bills, Resolutions and Codified Laws Relating to the University of Tennessee from Its Charter as Blount College To and Including 1927 Compiled by Miss Catherine Heiskell, with Revisions and Additions Through 1941 by Miss E. Lucy Ogden. [Knoxville, Tenn.: The University of Tennessee, 1943]. ca. 44 pp.

Hendricks, John T. "A Study of Administrative, Faculty, and Student Perceptions of the Campus Environment at The University of Tennessee" (Knoxville). Ed.D. dissertation (Educational Administration and Supervision); Knoxville, Tenn.: The University of Tennessee, Knoxville, June, 1970. xii, 114 pp.

Higgins, E. Eugene, and Mary B. Fuller. College and University Facilities Survey, Part 3: Inventory of College and University Physical Facilities [As of December 31, 1957]. Final Report. U. S. Department of Health, Education, and Welfare, Office of Education, publication no. OE-51007. Washington, D.C.: U. S. Government Printing Office, 1965. xxiii, 573 pp.

Higher Education for Tennessee's Future. A Master Plan for Higher Education Developed by the Tennessee Higher Education Commission. Nashville, Tenn.: State of Tennessee, January, 1973. vi, 94 pp.

Holland, Carl Walker. "Effects of Student In-Migration on the Finance of Public Higher Education in Tennessee." Ed.D. dissertation (Educational Administration and Supervision); Knoxville, Tenn.: The University of Tennessee, 1963. vii, 104 pp.

Hoover, Edgar M. An Introduction to Regional Economics. Second Edition. New York, N.Y.: Alfred A. Knopf, 1975. xvii, 395 pp.

Hoskins, James D. The University, A Composite Whole. Annual Statement of President James D. Hoskins to the Board of Trustees of The University of Tennessee, August, 1945. [Knoxville, Tenn.: The University of Tennessee, 1945]. 18 pp.

Hutchison, Robert S., and David C. Hodge. An Economic Survey of Blount County, Tennessee: A Study of Resources and Industrial Potentials. Knoxville, Tenn.: The University of Tennessee Bureau of Business Research, 1957. 92 pp.

Isard, Walter, et al. Methods of Regional Analysis: An Introduction to Regional Science. Cambridge, Mass.: The MIT Press, 1960. xxix, 784 pp.

Jellema, William W., editor. Efficient College Management. San Francisco, Calif.: Jossey-Bass Inc., Publishers, 1972. xviii, 156 pp.

Kamp, Ned A., and Associates, Consultants to Management, Shelby, N.C. Analysis, Knoxville Area Labor Market and Compensation Structure. Knoxville, Tenn.: Greater Knoxville Chamber of Commerce Economic Development Department, August, 1971. 47 pp.

Kerr, Alex, and Robert B. Williamson. "Regional Economics in the U. S.: A Review Essay." Growth and Change, A Journal of Regional Development, vol. 1, no. 1 (January, 1970), pp. 5-19.

Killebrew, Joseph Buckner, assisted by J. M. Safford, to whom local assistance was rendered by C. W. Charlton of East Tennessee and H. L. Bentley of West Tennessee. Introduction to the Resources of Tennessee: First and Second Reports of the Bureau of Agriculture for the State of Tennessee. Nashville, Tenn.: Tavel, Eastman & Howell, Printers to the State, 1874. viii, 1,193, xi pp.

Knoxville and Knox County, Tennessee, Metropolitan Planning Commission. Planning Unit Analysis. Knoxville, Tenn.: Knoxville and Knox County, Tennessee, Metropolitan Planning Commission, April, 1960. [iii], 186 pp.

_____. The Population of Knoxville and Knox County [Tennessee]. Knoxville, Tenn. Knoxville and Knox County, Tennessee, Metropolitan Planning Commission, August, 1962. vii, 44, [ca. 10] pp.

Knoxville Area Council of Local Governments and East Tennessee Development District. Knoxville Metropolitan Area, Problems and Programs. Knoxville, Tenn.: East Tennessee Development District, June, 1969. iii, [5], 217, [9] pp.

Knoxville Chamber of Commerce. Commercial and Industrial Survey of Knoxville, Tennessee. Knoxville, Tenn.: Knoxville Chamber of Commerce, June, 1939. [6], [99] pp.

_____, compiler, and Eugene C. Fretz, editor. City Data, Knoxville, Tennessee. Knoxville, Tenn.: American Institute of Real Estate Appraisers, September, 1947. [2], 54 pp. Also published as Industrial and Commercial Survey, Knoxville, Tennessee. Knoxville, Tenn.: Knoxville Chamber of Commerce, 1948. [2], 54 pp.

Kronbach, George. Personal Income Estimates: Tennessee, The Southeast and The Nation, 1929 to 1970; With County Data for Selected Years, 1929 to 1969. Knoxville, Tenn.: The University of Tennessee, Knoxville, Center for Business and Economic Research, February, 1972. [iv], 147 pp.

Larsen, Suzanne. Trends in the Class Profile of Entering Freshman at The University of Tennessee at Knoxville, 1965-1970. Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, September 10, 1971, vol. XII, no. 7. 17 pp.

Lucas, John A. The Environmental Impact on College Students [at The University of Tennessee] as Measured by TAPE [Transactional Analysis of Personality and Environment]. Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, 1968. iv, 52 pp.

"Married Student Housing Opens To Single Grads." The Graduate Cause (Knoxville, Tenn.: The University of Tennessee, Knoxville), vol. IV, no. 2 (March, 1977), p. 1.

Moore, John R., and Craig G. Ericksen. The Direct and Indirect Economic Impacts of UTK on the Knoxville Area, 1971-1972. Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, June 5, 1973, vol. XIII, no. 80. ii, 17 pp.

_____. The Direct and Indirect Economic Impact on the Knoxville Area of Units of The University of Tennessee Located at Knoxville, 1972-1973. Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, September 20, 1974, vol. XV, no. 2. [ii], 8 pp.

_____. The Direct and Indirect Economic Impact on the Knoxville Area of Units of The University of Tennessee Located at Knoxville, 1973-1974. Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, January 15, 1976, vol. XIV, no. 3. [iii], 8 pp.

Oakes, William Oscar. "An Organizational Structure for The University of Tennessee Systems-Level Administration." Ed.D. dissertation (Educational Administration and Supervision); Knoxville, Tenn.: The University of Tennessee, Knoxville, December, 1970. viii, 183 pp.

Office of Local Government, Tennessee State Comptroller of the Treasury. County Profile. Nashville, Tenn.: State of Tennessee, 1974. 200 pp.

Perloff, Harvey S., and Lowdon Wingo, Jr., editors. Issues in Urban Economics. Based on Papers Presented at a Conference Sponsored by the Committee on Urban Economics of Resources for the Future, Inc. Baltimore, Md., and London, England: The John Hopkins Press for Resources for the Future, Inc., 1968. x, 668 pp.

Peters, Evva Jean Price. "Income, Expenditures, and Financial Decision-Making Practices of Selected, Undergraduate Married Couples at The University of Tennessee, Fall and Winter Quarters, 1961-1962." M.S. thesis (Home Management); Knoxville, Tenn.: The University of Tennessee, August, 1962. v, 38 pp.

Pfouts, Ralph W., editor. The Techniques of Urban Economic Analysis. West Trenton, N.J.: Chandler-Davis Publishing Company, 1960. 410 pp.

Pickford, Michael. University Expansion and Finance. London, England: Sussex University Press, 1975. x, 237 pp.

Public Higher Education in Tennessee. A Report to The Education Survey Subcommittee of The Tennessee Legislative Council Committee. Submitted December 2, 1957, by Truman M. Pierce, Director of the Study, A. D. Albright, Associate Director of the Study. Nashville, Tenn.: State of Tennessee, 1957. xxv, 356 pp.

Real Estate Research Corporation. Trends, Conditions and Forecasts of Knoxville's Economy, and the Potential Demand for Land and Structures. Prepared for Knoxville, Tennessee, Community Improvement Program, Knoxville-Knox County Metropolitan Planning Commission, Knoxville, Tennessee. Chicago, Ill.: Real Estate Research Corporation, June, 1969. [ix], 194, 16 pp.

Richardson, Harry W. Input-Output and Regional Economics. London, England: Weidenfeld and Nicolson, 1972. [v], 294 pp.

_____. Regional Economics: Location Theory, Urban Structure, and Regional Change. New York, N.Y.: Washington, D.C.: Praeger Publishers, 1969. xii, 457 pp.

Riker, Harold C., and Frank G. Lopez. College Students Live Here: A Study of College Housing. New York, N.Y.: Educational Facilities Laboratories, Inc., 1961. 152 pp.

Scheps, Clarence, and E. E. Davidson. Accounting for Colleges and Universities. Revised Edition. Baton Rouge, Louisiana: Louisiana State University Press, 1970. xvi, 416 pp.

Schriver, William R., and Charles C. Sorsby. Factors Affecting the Attraction and Expansion of Industry in Tennessee --- The Industrialist's Viewpoint. Memphis, Tenn.: Memphis State University Bureau of Business and Economic Research, August, 1968. [iv], 33 pp.

Schriver, William R., and Joseph D. Thoresen. Major Sources of Social and Economic Data in Tennessee. Knoxville, Tenn.: Occupational Research and Development Coordinating Unit, College of Education, The University of Tennessee, June, 1968. v, 163 pp.

Siebert, Horst. Regional Economic Growth: Theory and Policy. Scranton, Pa.: International Textbook Company, 1969. xiii, 217 pp.

Smith, Clenton James. "The Economic Impact of The University of Tennessee Upon Metropolitan Knoxville." M.S. thesis (Geography); Knoxville, Tenn.: The University of Tennessee, August, 1964. v, 55 pp.

Smith, Sam B., editor and compiler, and Luke H. Banker, assistant editor. Tennessee History: A Bibliography. Knoxville, Tenn.: The University of Tennessee Press, 1974. xli, 498 pp.

Stanback, Thomas M., Jr., and Richard V. Knight, with Foreword by Eli Ginzberg. The Metropolitan Economy: The Process of Employment Expansion. New York, N.Y., and London, England: Columbia University Press, 1970. xxiv, 279 pp.

Strang, William A. The University and the Local Economy: A Study of the Economic Interaction Between the University of Wisconsin and the Dane County Economy. Madison, Wisconsin: The University of Wisconsin, Madison, Bureau of Business Research and Service, September, 1971. 132 pp.

Tennessee College Association Center for Higher Education. Tennessee Higher Education Physical Facilities Inventory Utilization Study. Nashville, Tenn.: Tennessee State Higher Education Facilities Commission, October 15, 1968. iv, 204, [2] pp.

Tennessee State Department of Education. Public Education in Tennessee: A Study of Tennessee's Program of Public Education And Suggestions for Continuing Its Development. A Report Prepared in Accordance With Chapter 121 --- Public Acts of Tennessee, 1945. Nashville, Tenn.: Tennessee State Department of Education, 1946, 1948. [iv], 154 pp.

Tennessee State Division of Industrial Development. 1973 Tennessee Directory of Manufacturers. Nashville, Tenn.: State of Tennessee, 1973. 579 pp.

Tennessee Taxpayers Association. Sales and Use Tax Collections, State of Tennessee, Fiscal Year Ending June 30, 1974, An Analysis and Comparison With Prior Years, Based Upon Data Supplied by the Department of Revenue of the State of Tennessee. Research Report No. 189. Nashville, Tenn.: Tennessee Taxpayers Association, November 1, 1974. 23 pp.

Tiebout, Charles M. The Community Economic Base Study. Supplementary Paper No. 16. New York, N.Y.: Committee for Economic Development, December, 1962. 86 pp.

Touraine, Alain. The Academic System in American Society. Third in a Series of Essays Sponsored by The Carnegie Commission on Higher Education. New York, N.Y., et al.: McGraw-Hill Book Company, 1974. xvi, 319 pp.

U. S. A. Tennessee Valley Authority, Industry Division. Agricultural-Industrial Survey of Anderson County, Tennessee. Knoxville, Tenn.: U. S. A. Tennessee Valley Authority, 1934. 174 pp.

U. S. Bureau of the Census, U. S. Department of Commerce. Census of Population, 1940, 1950, 1960, and 1970. Washington, D.C.: U. S. Government Printing Office

_____. 1972 Census of Retail Trade. Volume II: Area Statistics, Part 3: North Dakota-Wyoming. Washington, D.C.: U.S. Government Printing Office, May, 1976.

_____. 1972 Census of Selected Service Industries. Volume II: Area Statistics, Part 3: North Dakota-Wyoming. Washington, D.C.: U.S. Government Printing Office, May, 1976.

_____. 1972 Census of Wholesale Trade. Area Statistics: Tennessee. Washington, D.C.: U.S. Government Printing Office, October, 1974.

_____. Current Population Reports. Series P-26, No. 75-42: "Estimates of the Population of Tennessee Counties and Metropolitan Areas: July 1, 1974 and 1975," issued August, 1976. Series P-25, No. 644: "Estimates of the Population of the United States to November 1, 1976," issued December, 1976.

U. S. Bureau of Labor Statistics, U. S. Department of Labor. Employment and Earnings, States and Areas, 1939-1974. Washington, D.C.: U. S. Government Printing Office, 1975. xxxv, 809 pp.

U. S. Department of Commerce. Regional Employment By Industry, 1940-1970: Decennial Series for United States, Regions, States, Counties. A Supplement to the Survey of Current Business. Washington, D.C.: U. S. Government Printing Office, 1975. several hundred pages.

_____. Survey of Current Business, various issues, 1956-1976.

_____, Bureau of Economic Analysis. Regional Economics Information System, data printout, May, 1976.

U. S. Department of Health, Education, and Welfare. Fall Enrollment in Higher Education, various years, 1957-1975. Washington, D.C.: U. S. Government Printing Office, various years, 1957-1976.

The University of Tennessee. A Year of Profound Change, 1970-1971: Annual Report of Edward J. Boling, President, The University of Tenness, To The Board of Trustees, June 17, 1971. Knoxville, Tenn.: The University of Tennessee, July, 1971. [18] pp.

_____. The Changing Emphasis: 1972-73 Annual Report of Edward J. Boling, President, The University of Tennessee, To The Board of Trustees / June 21, 1973. Knoxville, Tenn.: The University of Tennessee, December, 1973. 33 pp.

_____. Progress and Problems: A Time for Building --- Central Report / Self Study / 1970 . Knoxville, Tenn.: The University of Tennessee, Knoxville, 1971. viii, 267, 7, 28, 36, 15, pp.

_____. Report of the Treasurer for the Year Ended June 30, . . . , The University of Tennessee, 1956-1976. Knoxville, Tenn.: The University of Tennessee, 1956-1976.

_____. The University of Tennessee Record, various issues, 1956-1976. Knoxville, Tenn.: The University of Tennessee, 1956-1976.

_____. The University of Tennessee Statement Prepared for The Legislative Council Committee, State of Tennessee, Submitted at Nashville, November 12, 1953. 61 pp.

_____. The University of Tennessee Study: Proposals Concerning the Role of the University in Improving Living in Tennessee. Knoxville, Tenn.: Office of the Dean of the University, March, 1941. 100 pp.

_____, Graduate School of Planning. 1975 Campus Plan, The University of Tennessee, Knoxville, Tennessee. Knoxville, Tenn.: The University of Tennessee Graduate School of Planning, May, 1966. [6], 77, [2] pp.

_____, Office of Institutional Research. Enrollment Summaries, 1973-1976.

_____, Knoxville, Department of Residence Halls. Handbook for Residence Hall Life, University of Tennessee, Knoxville, 1976-1977. Knoxville, Tenn.: The University of Tennessee, Knoxville, 1976. 28 pp.

_____, _____, _____, Statements of Operations, 1973-1976.

"U. T. Giant Contributor to Local Economy." Greater Knoxville (Knoxville, Tenn.: Greater Knoxville Chamber of Commerce), vol. 9, no. 6 (September, 1967), p. 12.

Weiss, Steven J., and Edwin C. Gooding. "Estimation of Differential Employment Multipliers in a Small Regional Economy." Land Economics, vol. XLIV, no. 2 (May, 1968), pp. 235-244.

Wolfcale, Carolyn P. 1971-1972 Statistical Summary, The University of Tennessee. Knoxville, Tenn.: The University of Tennessee Office of Institutional Research, 1972. vii, 130 pp.